3.15 LAND OWNERSHIP, MANAGEMENT, AND USE

This section describes the regulatory setting, along with the baseline conditions of land ownership, land management, and existing land use pattern in the EIS Analysis Area. Relevant land use plans are discussed in this section. Land status maps display land ownership and parcel boundaries for the EIS Analysis Area. Figure 3.15-1A through Figure 3.15-1E provides orientation through project land status maps. This section also describes the potential impacts to land ownership, management, and use patterns from the proposed Donlin Gold Project and alternatives. Additional details on recreational and subsistence uses of lands within the EIS Analysis Area are found in the related analyses in Section 3.16, Recreation and Section 21, Subsistence.

SYNOPSIS

This section describes current conditions and evaluates potential impacts to land ownership, land management, and land use from the proposed action and alternatives. Under each alternative, these characteristics are examined for the three major project components: mine site, transportation infrastructure, and pipeline.

Summary of Existing Conditions:

Land Ownership: The proposed mine site area is privately owned by Calista Corporation (Calista) for the subsurface and The Kuskokwim Corporation (TKC) for the surface. Proposed transportation facilities would affect land owned or managed by Calista, TKC, the State of Alaska, the City of Bethel, and private landowners. Lands affected by the proposed pipeline are owned or managed by the State of Alaska, the BLM, Calista, and Cook Inlet Region Inc. (CIRI). Alternative 3B – Diesel Pipeline would affect Tyonek Native Corporation lands as well.

Land Management: The mine site would primarily occupy private land, owned and managed by Calista and TKC, consistent with their land policies. The transportation facilities would occupy private lands managed by Calista and TKC, and public lands managed by the State of Alaska. The proposed transportation facilities would be consistent with the authorities and policies of the respective land owners. Port lands in Bethel and Dutch Harbor are managed under local city plans. The pipeline would occupy state lands for about 207 miles or 66 percent of the length, under the provisions of the *Susitna Matanuska Area Plan*, the *Susitna Flats State Game Refuge Management Plan* and the *Kuskokwim Area Plan* (KAP). Supply routes for pipeline construction would also cross lands within the *Southeast Susitna Area Plan* boundaries. The Iditarod National Historic Trail (INHT) passes through state-managed lands near and within the pipeline corridor. The *Iditarod National Historic Trail Comprehensive Management Plan* guides the state's management of these lands. About 97 miles or 31 percent of the pipeline right-of-way would occupy federal lands, which is currently managed under the *Southwest Management Framework Plan.*

Land Use: The project would affect lands from the west side of Cook Inlet, through the Alaska Range, onto the mine site 10 miles north of Crooked Creek, and through the Kuskokwim River valley to the Bering Sea. These are generally very remote lands, used primarily by local communities for dispersed subsistence activities, with low levels of use by others. Additional important land uses include: ongoing metals exploration and small mining operations in the vicinity of the mine site and the transportation facilities; and dispersed recreation (sport hunting, fishing, rafting, and hiking) along with the seasonally intensive use of the INHT for the winter races in the vicinity of a portion of the project pipeline. See Section 3.16, Recreation, and Section 3.21, Subsistence, for additional details on these land uses.

Expected Effects:

Alternative 1: No Action – This alternative would not affect land ownership or management, except that the land plans of Calista and TKC at the mine site would not be implemented. Land use at the mine site area would likely see no additional changes beyond those that have already resulted from the exploration and baseline studies work over the 16 years.

Alternative 2: Donlin Gold's Proposed Action – For all components, land ownership would experience no to very low impacts, and management would not be affected, because current managers would continue to hold authority and the proposed action is consistent with current management plans and policies.

Mine Site: Under this alternative, changes in land use at the mine site would be from partially disturbed land to intense industrial development. These changes, consistent with the goals of the landowners (Calista and TKC), would be long-term to permanent, and are considered to be major and beneficial. Access rights on easements crossing the mine site, including 17(b) easements, would be administratively adjusted and equivalent access provided.

Transportation Facilities: Land ownership, management, and use changes for transportation facilities would be permanent and regional in extent for the proposed airstrip, port improvements and mine access road. Overall the effects would be major (beneficial) except for a low (adverse) effect on a small extent of state lands affected by the mine access road.

Pipeline: For the proposed natural gas pipeline, the period of intense disturbance would be temporary during the 3 to 4 years of construction. Low level disturbance (brushing each decade) would be long-term during the period of operations and maintenance. Land ownership, management, and use changes for the proposed pipeline component would be moderate overall, although the INHT is of special importance with regard to this component. See also Section 3.17 Visual Resources for impacts and mitigation measures to reduce impacts to INHT users.

Other Alternatives: The effects on land ownership, management, and use from implementation of Alternatives 3A and 5A would be very similar to the effects of Alternative 2. Differences of note for other action alternatives include:

- *Alternative 3B (Diesel Pipeline)* would include a new 19-mile segment between Tyonek and the start of the proposed natural gas pipeline corridor, involving State of Alaska and CIRI/Tyonek Native Corporation lands, but without substantially altering use, ownership, and management of those lands.
- *Alternative 4 (Birch Tree Crossing [BTC] Port)* would include a 76-mile access road, which would cross Calista, TKC, and state-selected lands (managed by the BLM until conveyed). This alternative would also change the use of 62 acres belonging to Calista and TKC from undisturbed to developed land at the Birch Tree Crossing Port, while a similar footprint of land would not be developed at the Angyaruaq (Jungjuk) site.
- Under *Alternative 6A (Dalzell Gorge Route)*, the natural gas pipeline right-of-way would be co-located (or overlap) with the INHT for 14.5 miles, versus 4.0 miles under Alternative 2 (an increase of approximately 262 percent). In addition, under Alternative 6A approximately 29.4 miles of the proposed pipeline corridor would be within 1,000 feet of the INHT, compared to 10.5 miles for Alternative 2, representing an increase of 281 percent.

3.15.1 REGULATORY SETTING

3.15.1.1 FEDERAL REGULATIONS

The proposed Donlin Gold Project and alternatives would intersect federal lands managed by the Bureau of Land Management (BLM). Lands managed by the U.S. Fish and Wildlife Service (FWS) would not be intersected by the project , but are described because FWS refuge lands are in close proximity to the Project Area for the transportation facilities.

3.15.1.1.1 BUREAU OF LAND MANAGEMENT

Under the Federal Land Policy and Management Act (FLPMA) of 1976 (43 United States Code [USC] 1732), the Secretary of the Department of the Interior has the authority to regulate use, occupancy, and development of public lands, and prevent unnecessary or undue degradation of public lands. The term "public land" in this context refers to federal public lands. The BLM, under the authority of the FLPMA, manages approximately 75 million surface acres of federal public land within Alaska through its Fairbanks and Anchorage District offices.

An estimated 96.9 miles (or 30.8 percent) of the western portion of the proposed natural gas pipeline, and the diesel pipeline alternative, would occupy BLM-managed lands. Pursuant to the Mineral Leasing Act and 43 Code of Federal Regulations (CFR) Part 2880, the BLM has the authority to grant a right-of-way (ROW) for a natural gas pipeline to cross federal lands under its jurisdiction, or under the jurisdiction of two or more federal agencies, with the exception of lands in the National Park System, Outer Continental Shelf, and Indian Trust lands. Donlin Gold, LLC (Donlin Gold) has submitted two SF 299s: AA-92403 for the proposed ROW and AA-93815 for the fiber optic line.

These lands are currently managed in accordance with the Southwest Management Framework Plan (MFP). The Southwest MFP acknowledges that the development of renewable and non-renewable resources within the planning area would require the development of a surface transportation network, and cites the authority of the BLM under FLPMA and the Mineral Leasing Act of 1920 to make public lands available for such purposes (BLM 1981). There are no Alaska Native Claims Settlement Act (ANCSA) selections on BLM-managed lands intersected by the proposed natural gas pipeline ROW or alternative pipeline routes.

Under Alternative 4, the 76-mile road from the mine site to the Birch Tree Crossing (BTC) Port would cross lands selected by The Kuskokwim Corporation (TKC), an ANCSA village corporation. Until the selection process is concluded, these selected lands are managed by the BLM. If the selection were to proceed to conveyance, then these lands would be privately owned by TKC and Calista Corporation (Calista).

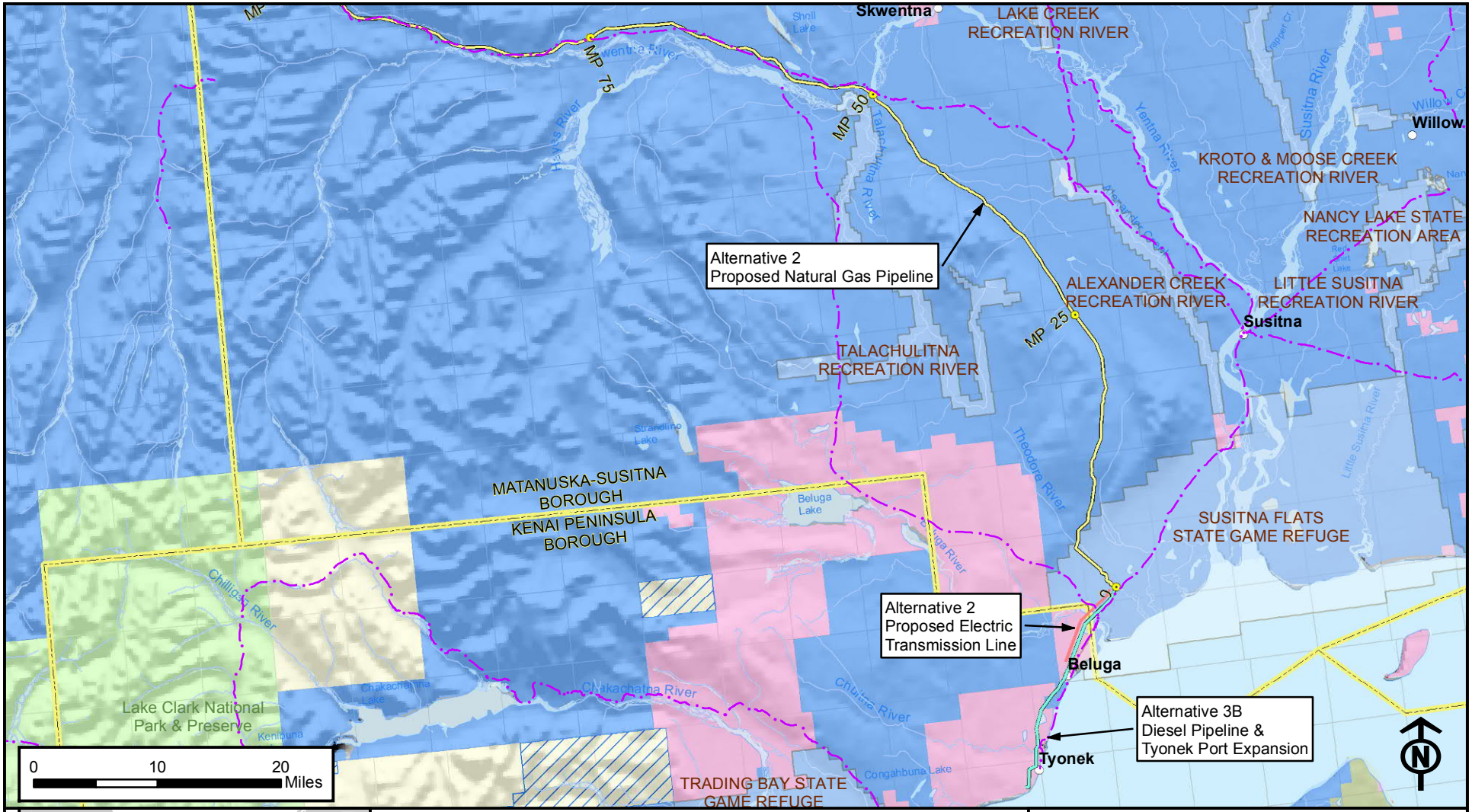
Some parcels of land in the Project Area are selected by the State of Alaska under the Alaska Statehood Act, and remain under BLM management until the selection process is concluded. Specific provisions govern any income associated with these state-selected lands until the selection process is completed. For state-selected lands prior to conveyance, 90 percent of proceeds derived from permits or ROWs shall be held by the Secretary of the Department of the Interior until such lands have been conveyed to the state through tentative approval or patent (ANILCA Sec. 906(k)(2)). Lands selected by the State of Alaska under Alaska National Interest Lands Conservation Act (ANILCA) are managed by BLM, but concurrence from the state for any authorization is required prior to any action taken by BLM [ANILCA Sec. 906 (k)(1)(B)]. Conveyed lands may be subject to encumbrances defined in the title documents, under BLM authorities.

For an overview of land status in the Project Area, see Figure 3.15-1A – Figure 3.15-1E.

Other project components, including the mine site, transportation facilities/river corridor, the mine access road, and Angyaruaq (Jungjuk) Port site occur within the vicinity of, but not on, BLM-managed lands. These proposed project components are therefore not subject to BLM's land management jurisdiction.

BLM's Ring of Fire Proposed Resource Management Plan (RMP) and Final Environmental Impact Statement (EIS) cover some lands within the Cook Inlet portion of the Project Area (BLM 2006). The Ring of Fire RMP serves as a framework of broad management policies and implementation actions for BLM lands, with the Alaska Peninsula/Aleutian Chain, and Southcentral regions potentially pertinent to the proposed project.

The BLM is in the process of developing the Bering Sea-Western Interior RMP and associated EIS, which will replace portions of the Southwest MFP and will guide management of those areas where project facilities would be located on or near lands managed by the BLM. The RMP will respond to potential demands such as major pipeline corridors, major mineral extraction projects, and transportation corridors (BLM 2013b). If the Bering Sea-Western Interior RMP and EIS are complete, new information may be incorporated into the analysis of the Donlin Gold Project. If the Bering Sea-Western Interior RMP is not finalized before the Donlin Gold EIS is completed, the BLM decisions would be based on consistency with existing land management plans.



DONLIN GOLD

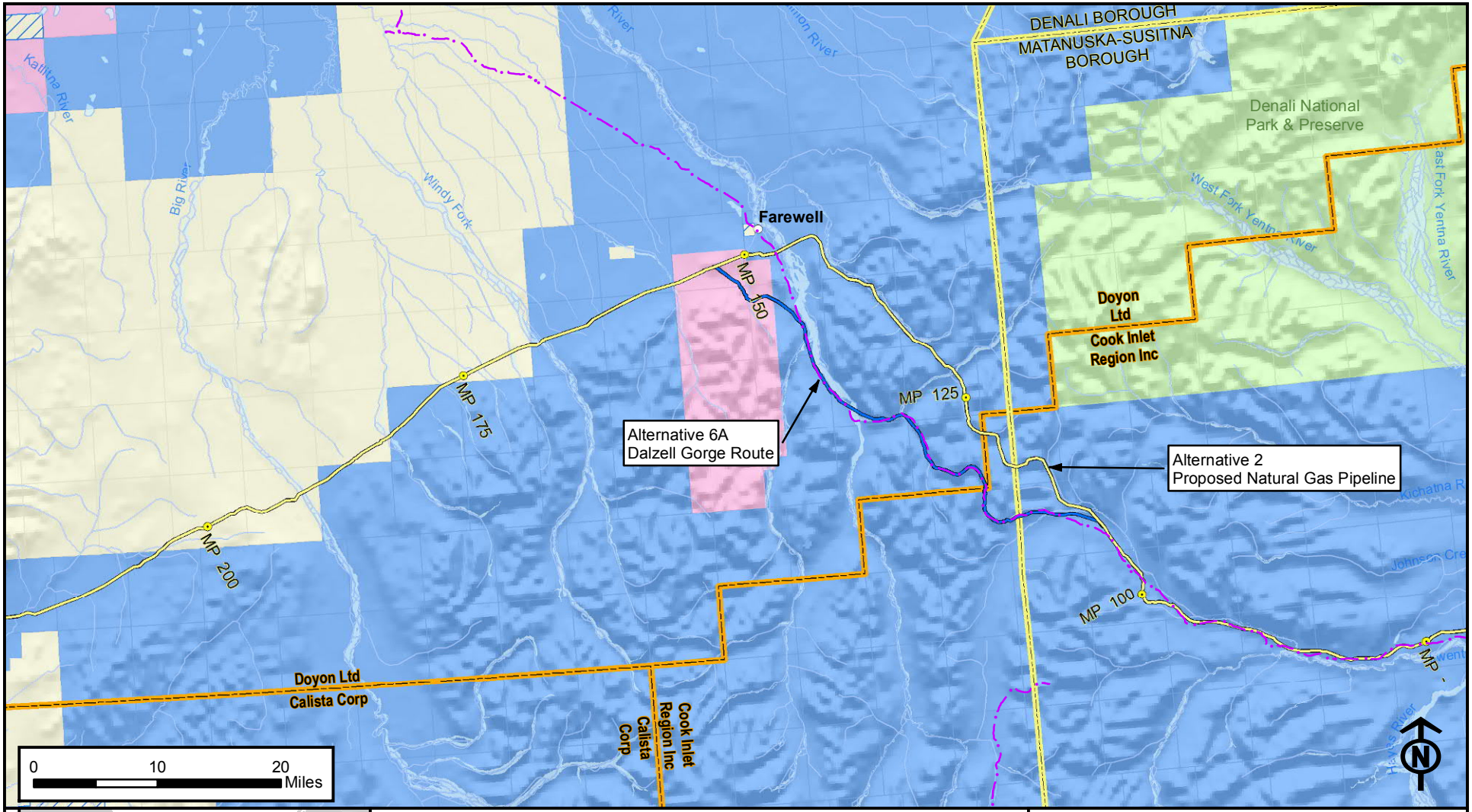
DONLIN GOLD PROJECT EIS

GENERALIZED LAND STATUS

MAP 1 of 5

NOVEMBER 2015

FIGURE 3.15-1A



DONLIN GOLD

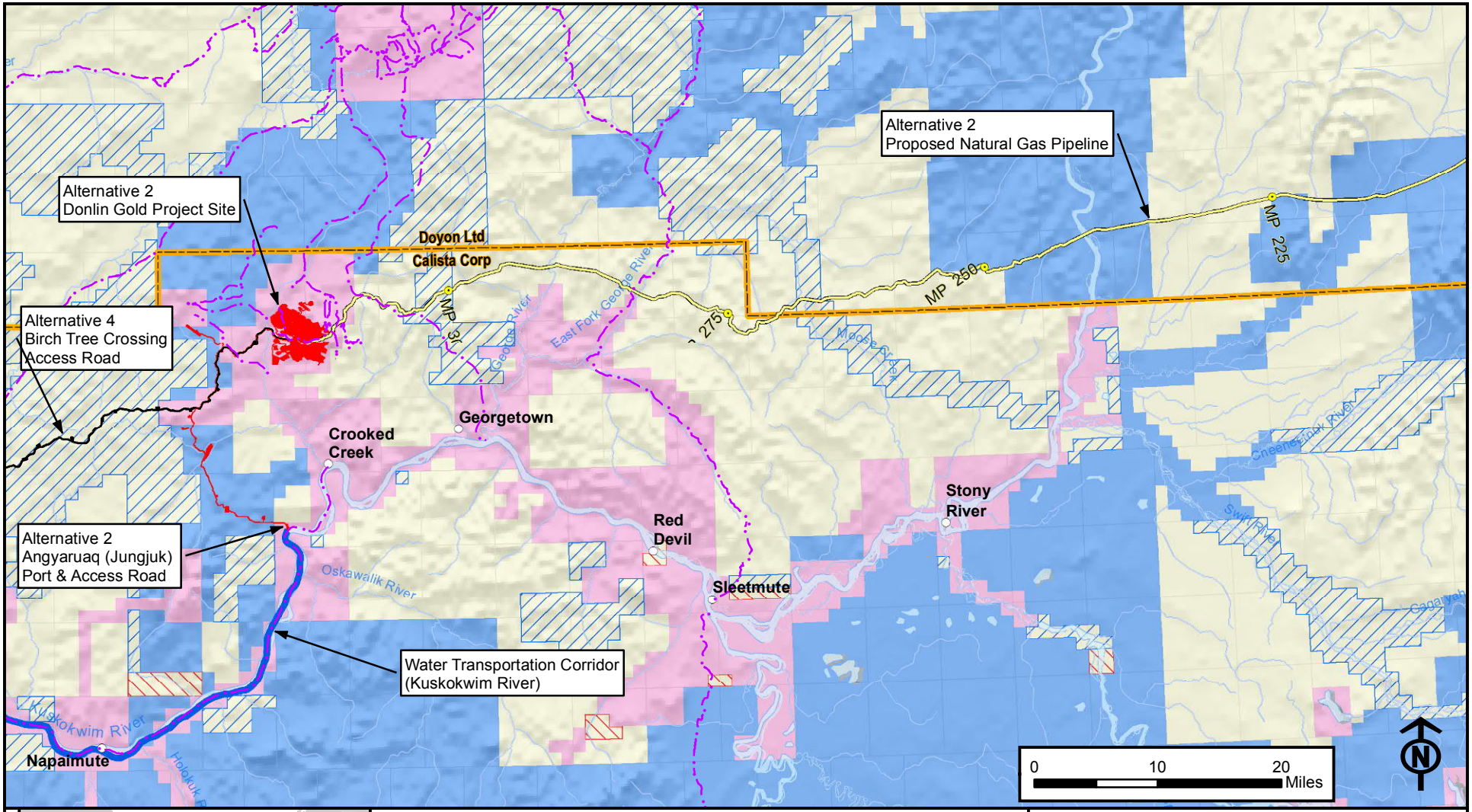
DONLIN GOLD PROJECT EIS

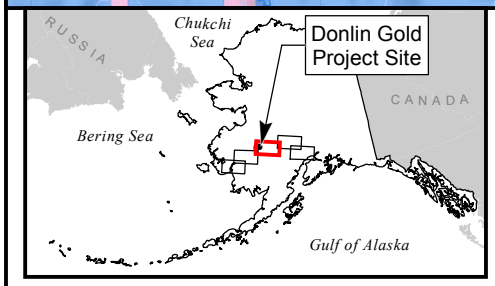
GENERALIZED LAND STATUS

MAP 2 of 5

NOVEMBER 2015

FIGURE 3.15-1B





- RS2477 Trails
- Proposed Natural Gas Pipeline
- Proposed Donlin Gold Site Layout
- Proposed Port Road
- Alternative 4 Birch Tree Crossing Road Alignment
- Water Transportation Corridor
- ANCSA Regional Corporations
- State Selected
- State Patent or Tentatively Approved (TA)
- ANCSA Selected
- ANCSA Patent or Interim Conveyed (IC)
- US Bureau of Land Management

DONLIN GOLD

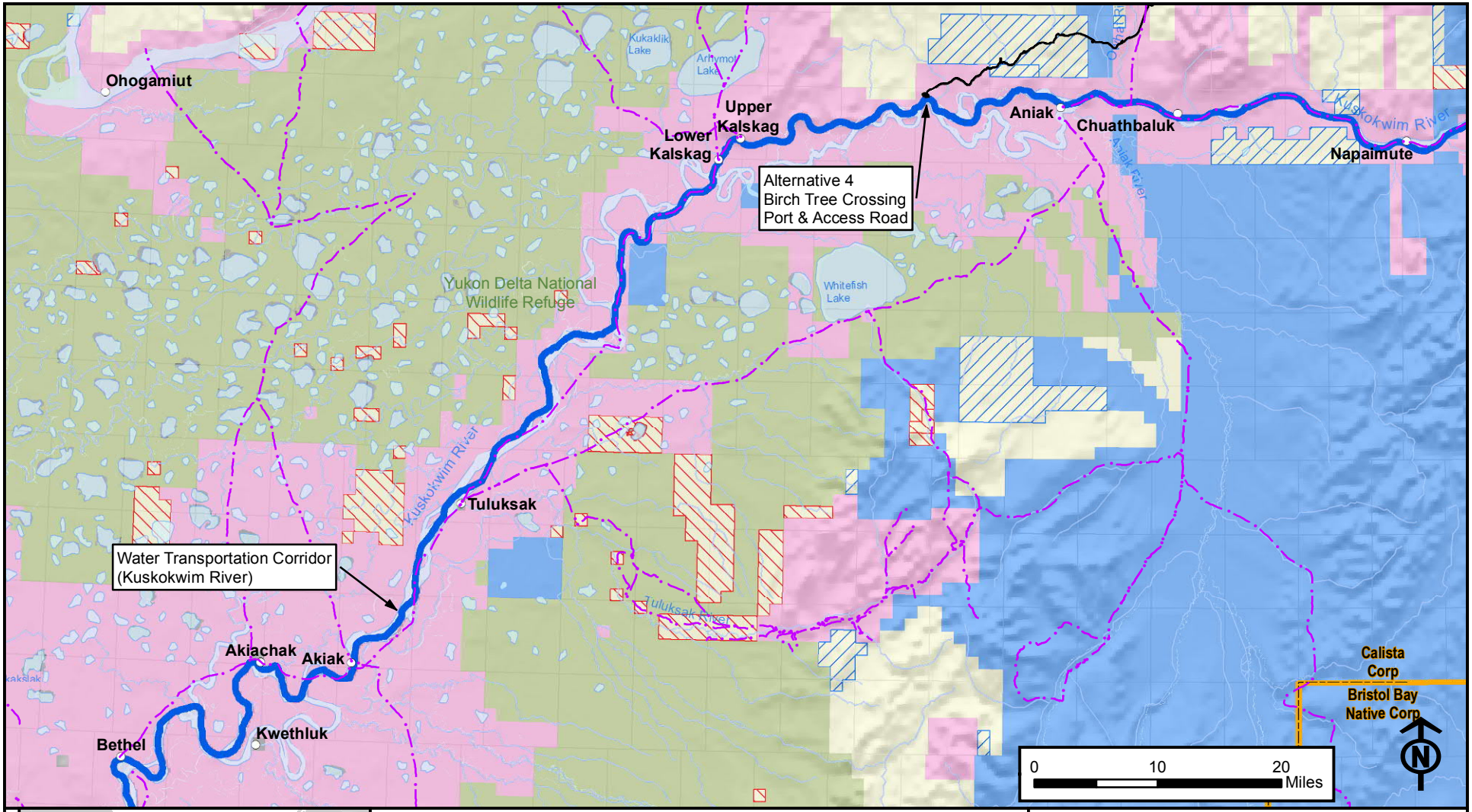
DONLIN GOLD PROJECT EIS

GENERALIZED LAND STATUS

MAP 3 of 5

NOVEMBER 2015

FIGURE 3.15-1C



DONLIN GOLD

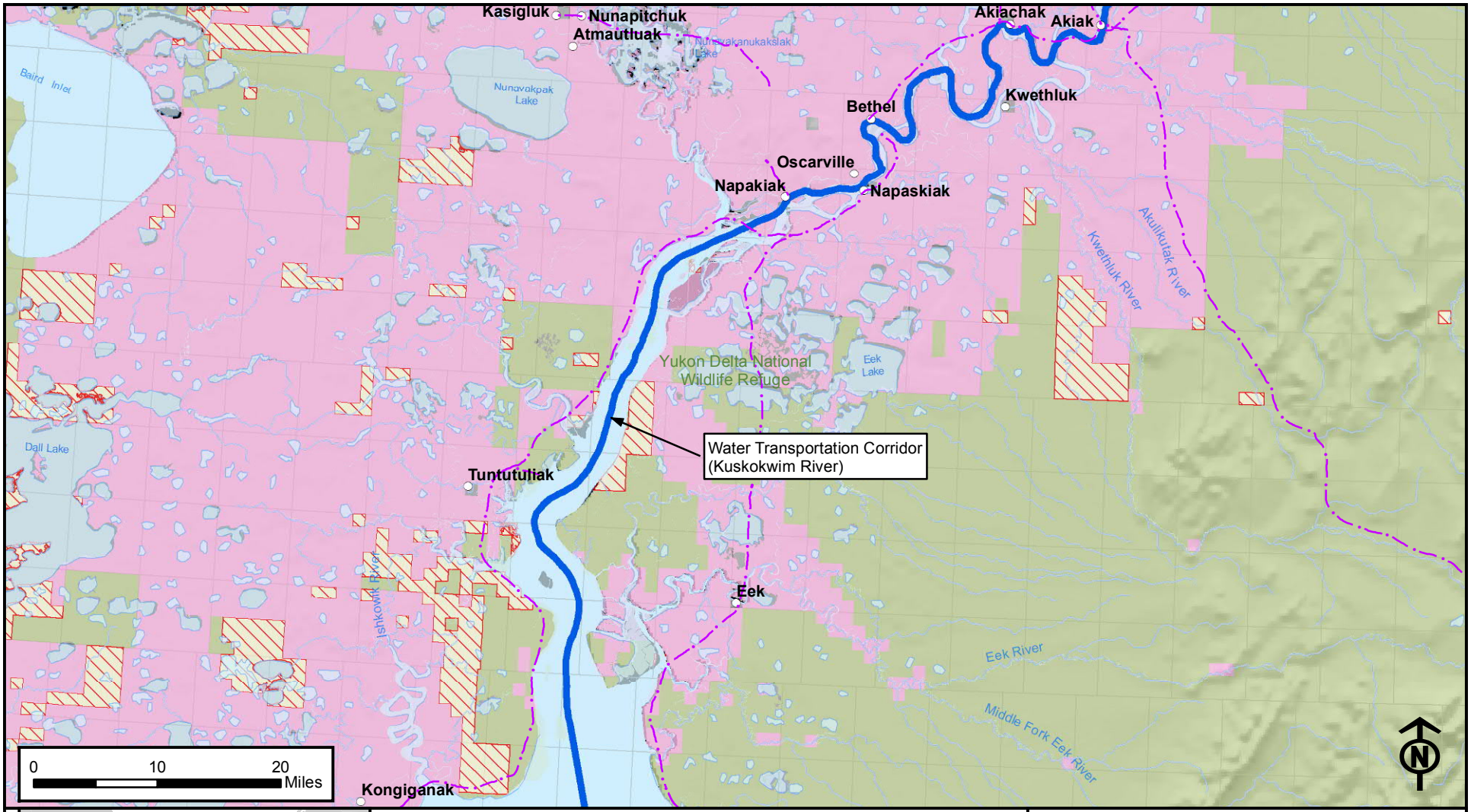
DONLIN GOLD PROJECT EIS

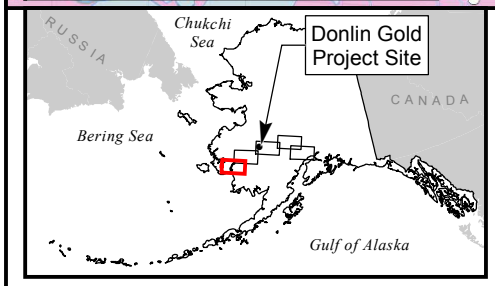
GENERALIZED LAND STATUS

MAP 4 of 5

NOVEMBER 2015

FIGURE 3.15-1D





- RS2477 Trails
- Water Transportation Corridor
- ANCSA Regional Corporations
- ANCSA Selected
- ANCSA Patent or Interim Conveyed (IC)
- US Fish and Wildlife Service
- US Bureau of Land Management

DONLIN GOLD

DONLIN GOLD PROJECT EIS

GENERALIZED LAND STATUS

MAP 5 of 5

NOVEMBER 2015

FIGURE 3.15-1E

Bureau of Land Management - Lands with Wilderness Characteristics

Decisions in the forthcoming Bering Sea-Western Interior RMP will guide BLM land management and implementation actions with regard to Lands with Wilderness Characteristics (LWC). The BLM recently completed a detailed inventory of LWC in the planning area (BLM 2015a). Decisions regarding these lands will be adopted in the final RMP. This section summarizes existing BLM policy on LWC, but will be revised based on the upcoming Bering Sea-Western Interior RMP. If the Bering Sea-Western Interior RMP is not finalized before the Donlin Gold EIS is completed, the BLM decisions would be based on consistency with existing land management plans.

Regulatory Framework

Section 201 of the FLPMA requires the BLM to maintain on a continuing basis an inventory of all BLM-administered lands and their resources and other values which include wilderness characteristics. The BLM must consider this information in developing and revising land use plans and when making subsequent project level decisions. Instructional Memorandum Number 2011-154, which provides guidance on how to consider LWC, further requires that the effects of the project on BLM-managed LWC be analyzed through the National Environmental Policy Act (NEPA) process prior to issuing a permit on a ROW application. The LWC inventory – regardless of the findings – does not, of itself, change the management or use of the lands (BLM 2011). BLM-managed LWC are not formal Congressionally-designated wilderness, in the meaning of the Wilderness Act.

Criteria for Designation as LWC

The criteria for wilderness characteristics pertain to three broad categories: Size, Naturalness, and Outstanding Opportunities for Solitude or Primitive and Unconfined Type of Recreation. Each of these criteria must be met in order to be considered or designated LWC. Supplemental values are further assessed if all other criteria are met. The criteria for each are described in BLM Manual 6310 (BLM 2013a), and are summarized as follows:

Size – The following criteria are required to be met in order for lands to be eligible as LWC:

- Roadless[1] area with over 5,000 acres of contiguous BLM lands;
- Roadless areas of less than 5,000 acres of contiguous BLM lands where such lands border designated wilderness, BLM Wilderness Study Areas, FWS areas proposed for wilderness designation, USFS Wilderness Study Areas or areas of Recommended Wilderness, and, National Park Service (NPS) areas recommended or proposed for designation;
- The area is of sufficient size as to make practicable its preservation and use in an unimpaired condition; or,
- Any roadless island of the public lands.

[1] Instructional Memorandum No.2013-106 (BLM 2013a) directs the BLM to consider the following guidance regarding the characteristics of trails that do not constitute a road:

- Trails that are used by snowmachines, whether maintained by the passage of snowmachines or periodically groomed and do not substantially modify the non-snow landscape and are not plowed to maintain vehicular access;
- Temporary winter vehicular inter-village and ice roads that do not substantially modify the non-snow landscape;
- Summer and winter trails that have minor vegetative brushing and clearing of vegetation to facilitate continued access, if those treatments are not substantially noticeable in the area as a whole.

Naturalness – The area must appear "Primarily affected by the forces of nature," and any work of human beings must be "substantially unnoticeable." "Substantially unnoticeable" should support the appearance of "apparent naturalness."

Outstanding Opportunities for Solitude or Primitive and Unconfined Type of Recreation – The area provides opportunities to avoid the sights, sounds, and evidence of other people in the area. The area provides opportunities for primitive an unconfined recreation (either a diversity of primitive recreation experiences, or outstanding opportunities for one type).

Supplemental Values – If criteria for size, naturalness, and outstanding opportunities criteria are met, a determination should be made to understand if the area contains ecological, geological, or other features of scientific, educational, scenic, or historical value (i.e., ACEC [Area of Critical Environmental Concern]).

3.15.1.1.2 LEGISLATIVELY DESIGNATED AREAS AND MANAGEMENT PLANS

The EIS Analysis Area contains publicly owned areas that have been designated by federal or state for special management. This section will describe the three legislatively designated areas that are potentially affected by the proposed project or alternatives: INHT, the Yukon Delta NWR, and the Susitna Flats State Game Refuge.

Iditarod National Historic Trail

The INHT was one of the first trails designated by Congress to recognize nationally important scenic or historic transportation routes. Congress designated the Iditarod as a National Historic Trail in 1978, and shortly afterwards the State of Alaska platted a survey of the trail from Susitna Station to Finger Lakes. The designation commemorates a 2,300-mile system of winter trails that first connected ancient Alaska Native villages and opened up Alaska for the last great American gold rush (BLM 2014).

> *The forest and tundra reclaimed the Iditarod Trail for almost half a century until Alaskans, led by Joe Redington, Sr., reopened the routes in the early 1970s. To draw attention to the role dogs played in Alaska's history, Joe and his friends created an epic sled dog race from Anchorage to Nome following the route of the historic Iditarod Trail. The Iditarod Trail Sled Dog Race ultimately revived dog mushing in Alaska and around the world. AGA 2009*

The INHT is known for diverse landscapes, climate, wildlife, and recreation opportunities. The historic trail designation was established, in part, due to the "isolated primitive quality of this historical environment… demanding of durability and skill during its winter season of travel." Amidst changes in transportation and communication, contemporary trail users have the opportunity to experience challenges of remote, primitive travel.

Most of the historic trail is located on publicly owned lands managed by the State of Alaska or federal agencies (although some segments pass over private lands). No one entity manages the entire historic trail. The INHT is a complex trail system stretching from Seward in the south to Nome on the Bering Sea. It crosses lands owned by several Alaska Native corporations, municipal governments, and the State of Alaska as well as federal lands managed by the FWS, BLM, the U.S. Forest Service, and the Department of Defense. In all, there are 10 institutional land managers and numerous private owners (BLM 2014).

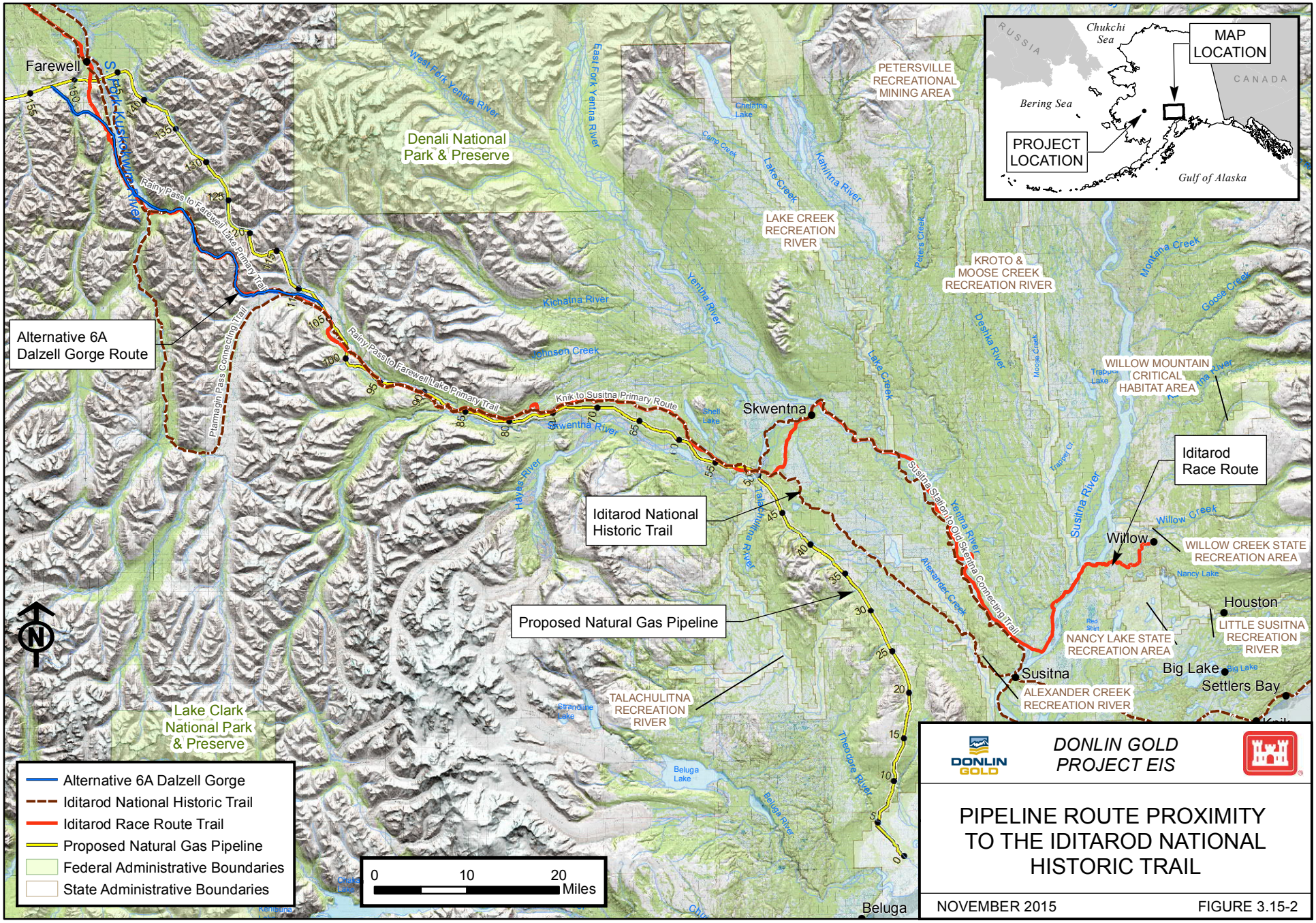
The Iditarod National Historic Trail Comprehensive Management Plan (CMP) is a Congressionally-mandated management plan for the collection of INHT resources. The INHT CMP, an interagency planning effort, recognized that no single agency manages the entire trail, and called for cooperative management by federal, state, and local agencies. The INHT CMP establishes a common guide used to promote the preservation, enjoyment, use, and appreciation of the trail. It identifies trails and sites comprising the historic trail system, and recommends possible management actions for protecting important segments, historic remnants, and artifacts for public use and enjoyment. The BLM coordinates the cooperative management of the INHT land and is the primary point of contact for matters involving the entire trail. The state, city, municipal, or borough land managers responsible for trail segments or historic sites identified in the INHT CMP are encouraged to enter into cooperative agreements with the federal government. These cooperative agreements define actions that are consistent with the management objectives of the INHT CMP on a segment-by-segment or site-by-site basis (BLM 1986a).

Figure 3.15-2 depicts the location of the INHT in relation to the proposed action and alternatives. All portions of the proposed or alternative pipeline ROWs that cross or approach the INHT would be located entirely on state-managed lands (SRK 2013b). In a Memorandum of Agreement with BLM, signed in 1987, the State of Alaska agreed to manage the portion of the INHT located on state lands in a manner that protects the historic values of the trail. When considering whether or not to grant a ROW for the proposed pipeline, the Alaska Department of Natural Resources (ADNR) would consider historic values of the INHT, and make a decision in the context of state laws, regulations, and policies.

Yukon Delta National Wildlife Refuge

In 1980, Congress passed ANILCA, (16 USC Sections 3101-3233, Pub. L. 96-487), which established the Yukon Delta NWR out of the Clarence Rhode NWR, Hazen Bay NWR, Nunivak NWR, and an additional 13.4 million acres of public lands. Section 101 of ANILCA describes the broad purposes of conservation system units throughout Alaska, including the Yukon Delta NWR. The purpose of the refuge, as stated in ANILCA, includes the following:

- Preserve lands and waters for the benefit, use, education, and inspiration of present and future generations;
- Preserve unrivaled scenic and geological values associated with natural landscapes;
- Maintain sound populations of, and habitat for, wildlife species;
- Preserve extensive, unaltered ecosystems in their natural state;
- Protect resources related to subsistence needs;
- Protect historic and archaeological sites;
- Preserve wilderness resource values and related recreational opportunities such as hiking, canoeing, fishing, and sport hunting;
- Maintain opportunities for scientific research in undisturbed ecosystems; and
- Provide the opportunity for rural residents engaged in a subsistence way of life to continue to do so.



DONLIN GOLD

DONLIN GOLD PROJECT EIS

PIPELINE ROUTE PROXIMITY TO THE IDITAROD NATIONAL HISTORIC TRAIL

NOVEMBER 2015 FIGURE 3.15-2

Section 303 of ANILCA states that the Yukon Delta NWR is to be managed for the following additional specific purposes:

i. To conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to, shorebirds, seabirds, whistling swans, emperor, white-fronted and Canada geese, black brant and other migratory birds, salmon, muskox, and marine mammals;

ii. To fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;

iii. To provide, in a manner consistent with the purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents; and

iv. To ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge.

In addition, subject to reasonable regulation, the Secretary of the Interior administers the NWR so as to not to impede the passage of navigation and access by boats on the Yukon and Kuskokwim rivers. FWS manages the Yukon Delta NWR according to the purposes specified by ANILCA and in accordance with the Comprehensive Conservation Plan (FWS 1988) and the Land Conservation Plan for Yukon Delta NWR (FWS 2004a). The land plan recognizes the potential for spilled fuel, oil, or chemicals to be transported into the NWR from commercial or industrial development along the Kuskokwim River.

The proposed Donlin Gold Project does not include a physical footprint on the Yukon Delta NWR. The river barging portion of the transportation facilities component would occur along the Kuskokwim River in the vicinity of the refuge, although the adjacent river bank uplands are generally in private ownership.

The bed of the Kuskokwim River below the ordinary high water mark is owned by the State of Alaska. From Bethel to the port sites at either BTC or Angyaruaq (Jungjuk), the FWS does not manage any of the river banks above the ordinary high water mark within the larger boundaries of the Yukon Delta NWR. The NWR lands are often close to the riverbank but separated by other land holdings, generally Alaska Native corporation lands. See Figures 3.15-1D and 3.15-1E above for land ownership in the Kuskokwim River corridor from Aniak to Bethel.

Denali National Park and Preserve

Congress established Mount McKinley National Park (later re-named) in 1917 for public enjoyment and recreation purposes, the preservation of fish and wildlife, natural curiosities, and scenic beauty. The park was expanded in 1922 and 1932 to protect wildlife and other park values. In 1980, ANILCA added approximately 2,426,000 acres of land to the park and established approximately 1,330,000 acres of land as Denali National Preserve. ANILCA re-designated the area as Denali National Park and Preserve.

The proposed pipeline and alternative route would be located in the vicinity of Denali National Park and Preserve (Figure 3.15-1B). None of the proposed pipeline routes would intersect this management unit. The proposed natural gas pipeline ROW is approximately 4.5 miles from

Denali National Park and Preserve boundary at its closest. Under Alternative 6A, the pipeline ROW would be located approximately 8 miles from the park and preserve at its closest.

Susitna Flats State Game Refuge

The Susitna Flats State Game Refuge is managed by ADF&G. The refuge spans approximately 300,800 acres between Beluga River and Point MacKenzie. It was established by the Alaska Legislature in 1976 to ensure the protection of fish and wildlife populations and habitat, and to provide for public opportunities for wildlife viewing, photography, recreation, and the use of fish and wildlife and their habitats (ADF&G 1998). ADF&G manages the refuge in accordance with the purposes for which it was established and under the guidance of the Susitna Flats State Game Refuge Management Plan (ADF&G 1998). The management plan states that new utilities may be allowed to cross the refuge where no feasible off-refuge alternative exists, consistent with the plan's goals and objectives. Existing corridors must be used wherever possible.

The proposed pipeline would be located within the refuge for approximately 5.1 miles between milepost (MP) 0 to just past MP 5. The Compressor Station would be located in the refuge at MP 0.4. In addition, a portion of above-ground transmission would parallel existing electric transmission line corridors to the metering station at MP 0 and then run a short distance to the compressor station. Under the terms of the management plan, any use, lease, or disposal of resources of state land in the Susitna Flats State Game Refuge, such as location of proposed facilities within the refuge, would require authorization from ADF&G and ADNR.

3.15.1.2 ALASKA NATIVE REGIONAL AND VILLAGE CORPORATIONS

In 1971, President Richard Nixon signed ANCSA into law. Under ANCSA, aboriginal land claims were settled in exchange for $962.5 million in compensation, as well as approximately 40 million acres of land (Norris 2002). ANCSA established 12 for-profit Alaska Native regional corporations and 225 Alaska Native village corporations to administer the settlement lands and compensation funds. A 13th regional corporation was later added for Alaska Natives living outside the state. Alaska Natives enrolled as shareholders in the village and regional corporations where they lived at the time of enactment. The regional and village corporations land entitlement was generally proportionate to the population of these corporations at the time of enrollment. In most cases, the surface estate is owned by the village corporations with the subsurface estate owned by the associated regional corporations. Some regional corporations also received additional fee estate lands (surface and subsurface), based on what was termed the "lands lost" formula. Ten village corporations in the proposed Project Area merged to form TKC. Calista owns the subsurface estate of the TKC lands.

Alaska Native corporation land is often held in large tracts and used for subsistence purposes or developed/sold to generate revenue. Alaska Native corporation-owned lands within the proposed pipeline and transmission line route consist of parcels with surface and subsurface rights owned by Calista and Cook Inlet Region Inc. (CIRI). While the boundary of Doyon Ltd. is in proximity to the proposed pipeline route, the corporation does not own land within the proposed pipeline area. The proposed mine site is located on surface land owned by TKC, with subsurface land owned by Calista. Some ancillary facilities are located on fee estate lands owned by Calista and are also included in the lease.

As private land, uses on land owned by Alaska Native corporations, are subject to approvals of the surface and subsurface landowners. The TKC Board of Directors and Land Committee manage the greater than 950,000 acres of TKC surface estate for the benefit of shareholders and in accordance with an adaptive Land and Resource Management Plan. Management objectives include the pursuit of economic opportunities that ensure the profitability and growth of TKC, and the overall land management direction is for moderate development of resources for in-river markets, emphasizing local employment and beginning at a low level of investment (Tanana Chiefs Conference, Inc. and TKC 1997). Non-shareholders must obtain a permit in order to access TKC lands. A Surface Use Agreement governs Donlin Gold's development of the mine and supporting facilities on TKC surface estate (TKC 2012).

Calista's land entitlement includes 6.2 million acres of subsurface estate and 238,000 acres of fee estate (surface and subsurface), managed for the purposes of shareholder employment and regional economic development. Uses of Calista subsurface estate include oil and natural gas exploration; construction material production (sand, gravel, and quarry rock); and mineral prospecting and production (Calista Corporation 2013a). Donlin Gold's proposed mining activities on Calista surface estate are governed by a lease agreement.

CIRI owns the surface estate (including sand and gravel) in an area near Beluga traversed by the proposed electric transmission line that would provide power for the proposed pipeline compressor station. In the vicinity of Beluga, CIRI generates income for its shareholders through its oil and gas leasing program. Donlin Gold would obtain a lease agreement with CIRI for the proposed electric transmission line.

3.15.1.3 STATE REGULATIONS

3.15.1.3.1 ALASKA DEPARTMENT OF NATURAL RESOURCES

ADNR, under AS 38.04.065 Land Use Planning and Classification and 11 AAC 55.010-.030, "shall, with local governmental and public involvement under AS 38.05.945, adopt, maintain, and, when appropriate, revise regional land use plans that provide for the use and management of State of Alaska-owned lands." Plans applicable to the Project Area include the Kuskokwim Area Plan (ADNR 1988), the Susitna Matanuska Area Plan (SMAP) (ADNR 2011b), and the Southeast Susitna Area Plan (SSAP). The proposed pipeline would be in the vicinity of (but would not occupy) the Talachulitna State Recreational Boundary, which is managed in accordance with the Susitna Basin Recreation Rivers Management Plan (ADNR 1991).

For ADNR managed lands that are not covered by a land management plan, ADNR, working with the public, identifies important land resources and how their lands could be used for the maximum public benefit. All resource and land uses, including recreation, are considered and evaluated. Whenever possible, multiple uses are allowed on these lands. The State of Alaska's Generally Allowed Uses on State Land provides a general explanation of the state's use management framework.

<u>Kuskokwim Area Plan</u>

The Kuskokwim Area Plan (KAP) divides the Kuskokwim River basin into 18 management units. The state lands in the proximity of the mine site, support facilities, mine access road, and Angyaruaq (Jungjuk) Port site, are located in Management Unit 10, while the western segment

of the proposed pipeline route is located in portions of Management Units 4, 5, 10, 11, and 13. Little state land is located near the mine site and western end of the pipeline (Management Unit 10). The river corridor is located adjacent to Management Units 10, 16, 17, and 18. State-owned lands within these management units are identified to be retained in public ownership and managed for multiple use, and nothing in the KAP precludes construction of the mine and related facilities. The proposed project is presumed to be consistent with the plan's goals for the use of subsurface resources, which call for making mineral and energy supplies available for development in a way that protects the integrity of the environment. An additional goal is for the state to provide support for mining by aiding in the development of infrastructure, such as ports and roads.

The KAP goals for the development of transportation and utility corridors within the planning area include minimizing costs, minimizing adverse impacts, promoting efficiency, and ensuring public safety. The management guidelines call for protecting hydrologic systems, co-locating surface access routes and facilities where feasible, protecting fish and wildlife resources, salvaging timber from ROW cleared for construction, maintaining access for recreational users, and siting utilities in a way that minimizes adverse impacts to other valuable resources or uses (ADNR 1988).

Susitna-Matanuska Area Plan

The ADNR has revised the state land use plan for over 9 million acres of state land in the Susitna and Matanuska River Valleys. The SMAP revises the majority of the 1985 Susitna Area Plan and encompasses most of the land within the Matanuska-Susitna Borough (ADNR 2011b). The SMAP designates primary uses on state land, provides general management guidelines for a variety of land uses and resources, and identifies specific management intent for individual units of land.

The SMAP specifies land management policies for each of the 11 regions within the plan boundaries. The proposed pipeline would intersect the Mt. Susitna and Susitna Lowlands regions. Prior to making an authorization decision, the ADNR takes into account the management guidelines and statement of intent specific to each unit within a region. The SMAP emphasizes minimizing land use conflicts through plan guidelines and intent rather than through prohibitions, although prohibitions are sometimes identified. Other uses are initially presumed compatible with the primary use. However, if the ADNR determines that a use conflict exists and that the proposed use is incompatible with the primary use, the proposed use shall not be authorized or it shall be modified so that the incompatibility no longer exists (11 AAC 55.040 (c)).

The Area-wide Land Management Policies include management guidelines relevant to pipeline development related to shorelands and stream corridors, and public access, as listed below (ADNR 2011b).

- Shorelands and Stream Corridors

  C. Public Access Adjacent to Waterbodies. Pursuant to AS 38.05.127, legal public access will be reserved to protect the public's right to travel to and along the ordinary high water of a waterbody without encouraging trespass. Permits, leases, and plans of operation for commercial and industrial uses, transportation facilities, pipelines and other water dependent uses may be authorized on state uplands adjacent to waterbodies if their

activities are consistent with the management intent for the area and if they maintain tideland and stream bank access, and protect important fish and wildlife habitat, public water supplies, and public recreation. Trails and other forms of non-motorized public access are generally considered to be appropriate within these areas, if they meet the conditions listed in 11 AAC 96.025.

H. Buffer, Easement, and Building Setback Widths. 2) d) Public access easements, including 'to and along' easements required under AS 38.05.127, or utility easements adjacent to tidelands, lakes, and streams: 50 feet. Other types of utility easements may be less than this width, depending on the purposes of the easement.

- Public Access
  - General Public Access

I. Siting and Constructing Temporary and Permanent Roads or Causeways. Temporary and permanent roads or causeways will, to the extent feasible and prudent, be routed to avoid vegetated tide flats, avoid streams and minimize alteration of natural drainage patterns, and avoid long-term adverse effects on fish and wildlife, water quantity or water quality. If a temporary road is routed through vegetated tidelands, clean fill will be required and construction methods, which facilitate removal of the fill, will be required. Temporary roads should be obliterated when no longer needed for their original purpose.

  - Trails Within and Between Developing Areas

F. Alignment with Crossings. When it is necessary for power lines, pipelines or roads to cross trails, crossings should be at a 90-degree angle. Vegetative screening should be preserved at trail crossings.

Southeast Susitna Area Plan

The ADNR determines management and land use for 255,741 acres of state-owned uplands, state-selected uplands, and state-owned tidelands in portions of the Matanuska-Susitna Borough. The SSAP (ADNR 2008) supersedes the 1982 Willow Sub-Basin Area Plan, a portion of the South Parks Highway Subregion of the 1985 Susitna Area Plan, the 1989 Deception Creek Land Use Plan, and the 1991 Kashwitna Management Plan. State lands are to be managed for multiple use as mandated in the Alaska Constitution. The SSAP planning area is divided into six regions. Supply routes for pipeline construction may affect state land within the Willow Region (ADNR 2015b).

Goals for state lands in the SSAP planning area include economic development with a self-sustaining and diverse local economy, protection of wildlife habitat and avoidance of user conflicts, cost minimization of providing government services and facilities, enhancement of public health and safety, and diverse opportunities for public use of state lands, including recreation (ADNR 2008). SSAP goals also include a high quality of life through maintaining air, land and water, fish and wildlife habitat, opportunities for private ownership or leasing of state land, and long-term productivity and quality of renewable resources. The proposed project would be compatible with the goal of economic development as it would bring potential jobs and income to the SSAP planning area.

The SSAP sets area-wide land management policies which apply to state land regardless of the land use designation. The proposed pipeline would not be located within the SSAP planning area, but the winter access roads to transport equipment and materials may occur within the SSAP planning area. Under public access in the SSAP, there is a management guideline for power lines, pipelines, or road crossings to be at a 90-degree angle, and "vegetative screening should be preserved at trail crossings" (ADNR 2008). The shorelands and stream corridors policy section contains a management guideline to reserve legal public access to waterbodies, pursuant to AS 38.05.127. These management guidelines are consistent with the SMAP (ADNR 2011b) described previously.

3.15.1.3.2 ALASKA DEPARTMENT OF NATURAL RESOURCES, STATE PIPELINE COORDINATOR'S OFFICE

Donlin Gold submitted an Application for Pipeline ROW Lease to the State Pipeline Coordinator's Office (SPCO), under the Right-of-Way Leasing Act AS 38.35.050. The SPCO would manage the pipeline ROW and the lands encompassed by the ROW in accordance with the lease for the purposes of construction, operations, maintenance, and closure of a pipeline and all pipeline-associated actions.

3.15.1.3.3 ALASKA DEPARTMENT OF FISH AND GAME

The mission statement of ADF&G is to:

> protect, maintain, and improve the fish, game, and aquatic plant resources of the state, and manage their use and development in the best interest of the economy and the well-being of the people of the state, consistent with the sustained yield principle.

Pursuant to 5 AAC 95.420, a special area permit is required for activities within state game refuges, state recreation areas, and state parks except for lawful hunting, trapping, fishing, viewing, and photography. In addition, the use of helicopters or motorized vehicles requires a permit.

The Susitna Flats State Game Refuge is the only ADF&G-managed unit that would be transected by the project (see Legislatively Designated Areas and Management Plans above).

3.15.1.4 LOCAL REGULATIONS

Cities and boroughs exercise authority to provide for planning, platting, and land use regulations under AS 29.35 and 29.40. Planning powers are either mandatory or optional depending upon the classification of the city or borough.

3.15.1.4.1 KENAI PENINSULA BOROUGH

A portion of the proposed transmission line to power the pipeline compressor station crosses private surface estate land owned by CIRI within the Kenai Peninsula Borough (KPB). As a second class borough, the KPB is required to provide for planning, platting, and land use regulations on an area-wide basis (both inside and outside of cities) within the Borough in

accordance with AS 29.40. Land use within the KPB is guided by the KPB Comprehensive Plan (KPB 2005). The Code of Ordinances dictates the KPB's powers and operations.

Zoning in the KPB is unrestricted outside of the KPB's cities and eight Local Option Zone Districts, none of which are located within the Project Area. However, the KPB does regulate floodplain development, coastal zone development, and development near certain anadromous fish streams (including the Beluga River) through the borough. The KPB Code of Ordinances requires that a conditional use permit be obtained prior to any activity that would cause major erosion or damage to riparian habitat within a 50-foot setback from the high water mark of the Beluga River. In addition, property owners within the designated 100-year floodplain must obtain a permit from the KPB prior to development on those lands, pursuant to Chapter 21.06 Floodplain Management. The proposed transmission line would require a conditional use permit from KPB because it would be partially located within the 100-year floodplain, including where it would cross the Beluga River.

The KPB Comprehensive Plan does not contain goals, objectives, or implementation actions specific to development of a transmission ROW on lands within the KPB. However, Goal 6.5 calls for maintaining the freedom of property owners in rural areas of the KPB to make decisions and control use of their private land consistent with other goals and objectives of the comprehensive plan.

3.15.1.4.2 MATANUSKA-SUSITNA BOROUGH

The proposed pipeline would be located within the Matanuska-Susitna (Mat-Su) Borough between MP 0 and MP 117.2, and the proposed transmission line would also be located within the Borough. The Mat-Su Borough (MSB), as a second class borough, is required to provide for planning, platting, and land use regulations on an area-wide basis (both inside and outside of cities) within the Borough in accordance with AS 29.40. The MSB may delegate these powers to a city within the Borough (AS 29.40.010).

The MSB's Planning Commission was established to perform the area-wide functions of planning, platting, and zoning. The Commission's recommendations are then transmitted to the MSB Assembly, a body of elected district representatives that sets policy and exercises legislative power within the Borough. According to MSB Chapter 15.24 Zoning Functions, the Assembly has the authority, with the Planning Commission's recommendation, to establish building and land use regulations and create districts (MSB 15.24.015). With the assistance of the Planning Commission, the Assembly prepares and revises the MSB Comprehensive Plan (MSB 2005). The MSB Comprehensive Plan provides general goals and policy recommendations for a 20-year period to address development patterns, technological advances, a growing population, and a diversifying economy. The plan states that:

> [i]n order for the Borough to keep pace with new technologies and globalization of the economy, recommendations should be considered for other modes of transportation such as electrical, communications, and pipelines.

The plan includes the following policy for orderly development of multi-modal transportation, including pipelines and electrical transmission lines:

> Policy T1-4: Develop an effective multi-modal transportation plan that provides recommendations for modes of transportation including surface, air, waterborne,

rail, public transit and trails, pipeline, electrical, and communications. Such a plan should strive to better connect the borough's various communities and neighborhoods.

While there is no Borough-wide zoning code, the MSB uses both Borough-wide and special use district (SpUD) ordinances to regulate land use. The proposed pipeline would not be located within any SpUDs but still would be subject to MSB-wide ordinances. MSB-wide ordinances employ setback standards, including a 75-foot water body setback adopted by voter initiative; sanitary solid waste disposal sites; and mobile home park standards. Land development in the Borough is subject to MSB Title 17.02, Mandatory Land Use Permit.

3.15.1.4.3 BETHEL CENSUS AREA

The mine site, Kuskokwim River corridor, and a portion of the western segment of the proposed pipeline would be located within the boundaries of the Bethel Census Area. The Bethel Census Area is a 45,508 square-mile portion of Alaska's Unorganized Borough, which encompasses nearly 323,400 square miles of the state and comprises the lands of Alaska not within the boundaries of the state's organized boroughs. Planning and zoning within the Unorganized Borough is overseen by the state legislature (Alaska State Constitution, Article 10, Section 3 and 6, and AS 29.03.010). Cities and tribal organizations typically provide community services within the unorganized borough. The City of Bethel is the largest community within the Unorganized Borough.

City of Bethel

The proposed Bethel cargo terminal would be located within the City of Bethel. Land use and planning within the City of Bethel is guided by Title 15-18 of the Bethel Municipal Code and the Bethel Comprehensive Plan (City of Bethel 2013, City of Bethel 2011). It is anticipated that the cargo terminal would be developed within the area designated for industrial/commercial use on the City of Bethel Future Land Use Plan Map (City of Bethel 2011). Pursuant to the Zoning Code (Title 18), permitted and principle uses and structures within an industrial district include shipping or receiving terminals and bulk fuel distribution and storage (18.40.020).

The Comprehensive Plan acknowledges that the city's existing port facilities require maintenance or capital investment. In addition, the Comprehensive Plan includes recommendations for improvements to the Port of Bethel infrastructure in the event that Donlin Mine (i.e., Donlin Gold LLC) contracts with the Port for its shipping needs. The Comprehensive Plan contains the following goals and strategies related to the proposed Donlin Gold Project, including land use, education and training, and economic development provisions:

General Land Planning

GOAL 1: Reserve space for critical anticipated community needs, including commerce, transportation, housing, community facilities and infrastructure.

Strategy 1: Reserve land for specific uses that are a) critical to the future of the community, and b) almost certainly will need space for expansion or relocation. These include: Port expansion and/or relocation. The current port site may not be useable in the future, due to changes in the river's course. Development of the Donlin Creek Mine (Donlin Gold Project) may create a need for new expanded port facilities.

Port and Harbor

GOAL 5: Maintain Bethel's status as the primary port for commerce and transportation on the Kuskokwim River.

Strategy 2: Complete longer-term capital improvement projects and deferred maintenance.

Action 2g: Depending on whether or not the Donlin Mine (Donlin Gold Project) is built, complete 2010 Port of Bethel Expansion Feasibility Study recommendations.

Education and Job Training

GOAL 5: Support lifelong education and vocational training, particularly training tied directly to job placement in local and regional growth industries.

Action 2a: Encourage major employers to train and hire locally. An example of local hiring practices, Donlin Creek Mine (Donlin Gold Project) is located on [Alaska] Native land. According to the project website, 90 percent of the employees currently working at the project site, including 9 of 10 supervisors, are local hires.

Economic Development Implementation

GOAL 6: Support stronger regional cooperation and regional economic development.

Strategy 2: Work cooperatively with the City, Bethel-based regional nonprofits, and Alaska Native organizations on specific local issues of common concern.

Action 2b: Develop a regional response to the opportunities and challenges posed by the Donlin Creek Mine (Donlin Gold Project) (e.g., environmental protection, port location, options for regional energy solutions, employment and training).

3.15.1.5 LEGAL ACCESS

Within the EIS Analysis Area, there are several legal mechanisms to ensure consistent surface access to public lands, and in some instances, private parcels or traditional use areas. These mechanisms for access include Revised Statute (R.S.) 2477 Rights-of-Way (ROWs), ANCSA Section 17(b) Easements, ANILCA Sections 811 and 1110, State Section Line Easements, and State Public Access Easements. Each mechanism is discussed below.

3.15.1.5.1 REVISED STATUTE 2477 RIGHTS-OF-WAY

Section 8 of the 1866 Mining Act that states, "the right-of-way for the construction of highways over public lands, not reserved for public uses, is hereby granted." In 1873, the provision was separated from the Mining Act and reenacted as R.S. 2477. In 1938, it was recodified as 43 USC Section 932. In 1976, the FLPMA repealed both the 1866 Mining Act and R.S. 2477, but all ROWs that existed on the date of the repeal (October 21, 1976) were preserved under 43 USC Section 1769 through a savings provision for prior established rights. BLM lacks authority to determine the validity of R.S. 2477 ROWs, but may create informal, non-binding assertions for land use planning and management purposes. Public authorities may accept the ROW under Alaska law.

The State of Alaska recognizes approximately 650 R.S. 2477 routes throughout the state (Alaska Statutes 19.30.400). The BLM will not process or review R.S. 2477 claims, pending further direction from the Secretary of the Interior. The assertion of these routes on federally managed land has not been recognized and it is unlikely that any state R.S. 2477 assertions on BLM-managed lands will be processed prior to issuance of permits for this project. The proposed Project Area would intersect or follow along 12 state-claimed R.S. 2477 ROWs, listed in Table 3.15-1.

Table 3.15-1: Revised Statute 2477 Rights-of-way in Project Area

ID	Name	Project Component
RST 59	Crooked Creek-Aniak Trail	Transportation Facility
RST 76	Flat-Georgetown Trail	Pipeline
RST 174	Rainy Pass-Big River Trail	Pipeline
RST 199	Susitna-Rainy Pass Trail	Pipeline
RST 380	Moore Creek-Sleetmute	Pipeline
RST 545	Return Creek - Crooked Creek Trail	Mine Site
RST 546	Return Creek Landing Area - Crooked Creek Ruins Trail	Mine Site
RST 547	Donlin Creek - Dome Creek - Crooked Creek Via Omega Gulch Trail	Mine Site, Pipeline
RST 548	Dome Creek - Anaconda - Bell Creek Trail	Mine Site, Pipeline
RST 549	Dome Creek-Bell Creek Ridgetop Trail	Mine Site, Pipeline
RST 550	Crooked Creek Cabin - American Creek Trail	Mine Site
RST 1475	Willow Creek-Flat Creek Trail	Mine Site

Source: ADNR 2015.

3.15.1.5.2 SECTION LINE EASEMENTS

Section line easements are state-recognized easements for highway purposes that run along a surveyed section line of the rectangular survey system. Easements are public ROWs, 33-, 50-, 66-, 83-, or 100-feet wide. The state asserts that all 33- and 66-foot wide section line easements were acquired by the state under R.S. 2477, regardless of whether trails have ever been developed along them. Section line easements are authorized in law and may be established when the rectangular survey of a section line occurs. Section line easements are used primarily for transportation, but also for access to recreation. The proposed Project Area would encompass several section line easements.

3.15.1.5.3 ALASKA NATIVE CLAIMS SETTLEMENT ACT SECTION 17(B) EASEMENTS

Section 17(b) of ANCSA reserves linear access easements to public land and water on lands that have been or will be conveyed to Alaska Native Village and Regional Corporations (ADNR 2013b). As such, there can be no Section 17(b) easements on federal or state-managed land. Easements can take the form of 60-foot wide roads, 25- and 50-foot trails, or one-acre sites for

short-term uses, and are reserved to allow the public to cross private property in order to reach public lands and waterways. They do not authorize public access to the private land that the easement crosses (BLM 2009a).

Section 17(b) easements have specific allowable uses that are stated in the conveyance document. They cannot be reserved or retained for recreational purposes, but can provide access for recreational opportunities on public land. Any other uses are prohibited. Hunting, fishing, or trapping on or from the easement is not allowed unless a permit from the landowner is obtained.

The proposed Project Area would intersect or follow along eight Section 17(b) easements, primarily near the west end of the proposed pipeline route and around the mine site (see Table 3.15-2 and Figure 3.15-3). There are also Section 17(b) easements in the Yukon Delta National Wildlife Refuge, and near both ends of the proposed pipeline.

Table 3.15-2: Section 17(b) Easements in Project Area

ID	Description	Project Component
EIN 8 C3,L	50' wide public easement for existing trail	Mine Site
EIN 9 D1,L	50' wide public easement for existing trail	Mine Site
EIN 10 D1	50' wide public easement for existing trail	Mine Site, Pipeline
EIN 11 D1	50' wide public easement for existing trail	Mine Site, Pipeline
EIN 15 D1	25' wide public easement for proposed access trail	Mine Site
EIN 21 C4	One acre site easement upland of ordinary high water mark.	Transportation Facility
EIN 21A C4	25' wide public easement for proposed access trail	Transportation Facility
EIN 27 C4	50' wide public easement for existing road	Mine Site

Source: ADNR 2015.

3.15.1.5.4 STATE PUBLIC ACCESS EASEMENTS

Three 100- to 400-foot wide State Public Access Easements exist on state land for the INHT along the proposed pipeline route. Under these easements, the State of Alaska reserved public access for present and future needs along the corridors, as provided under 11 AAC 51.015 (d)(1), as well as authorization for trail improvements, trail maintenance and safety cabins. These are ADL 222930, (Susitna to Rainy Pass); ADL 230122 (Puntilla Lake to Rohn) and ADL 230363 (Rohn to Takotna). All of the State Public Access Easements in the Project Area are listed in Table 3.15-3; the three mentioned above are listed as Iditarod Trail easements, and three others are not associated with the INHT.

Table 3.15-3: State Public Access Easements in Project Area

ID	Description	Project Component
ADL 33939	Public Road Easement,100' Wide, Hilcorp Alaska, LLC	Pipeline
ADL 57588	DOT Public Easement Application to ADNR, 400' Wide, Chuitna to Goose Bay Road	Pipeline

Table 3.15-3: State Public Access Easements in Project Area

ID	Description	Project Component
ADL 222930	Iditarod Trail, 400' Wide, Susitna to Rainy Pass	Pipeline
ADL 230122	Iditarod Trail, 400' Wide, Puntilla Lake to Rohn	Pipeline
ADL 230363	Iditarod Trail, 400' Wide, Rohn to Takotna	Pipeline
ADL 231546	Cook Inlet Energy, LLC. Private ESMT APLN, Natural Gas Gathering Line, 20' Wide	Pipeline

Source: ADNR 2015.

3.15.1.5.5 OMNIBUS ACT QUITCLAIM DEED RIGHTS-OF-WAY

The Alaska Omnibus Act, enacted on June 25, 1959 (P.L. 86-70 - 73 Stat. 141), directed all lands or interests in lands owned, held, administered by, or used in connection with the activities of the Bureau of Public Roads in Alaska be conveyed to the State of Alaska. Although not all of the conveyed ROWs were considered "constructed," the system mileage of the ROWs included 2,200 miles classified as "primary" system routes, 2,208 miles of "secondary class A" routes, and 990 miles of "secondary class B" routes for a total of 5,399 miles of ROW.

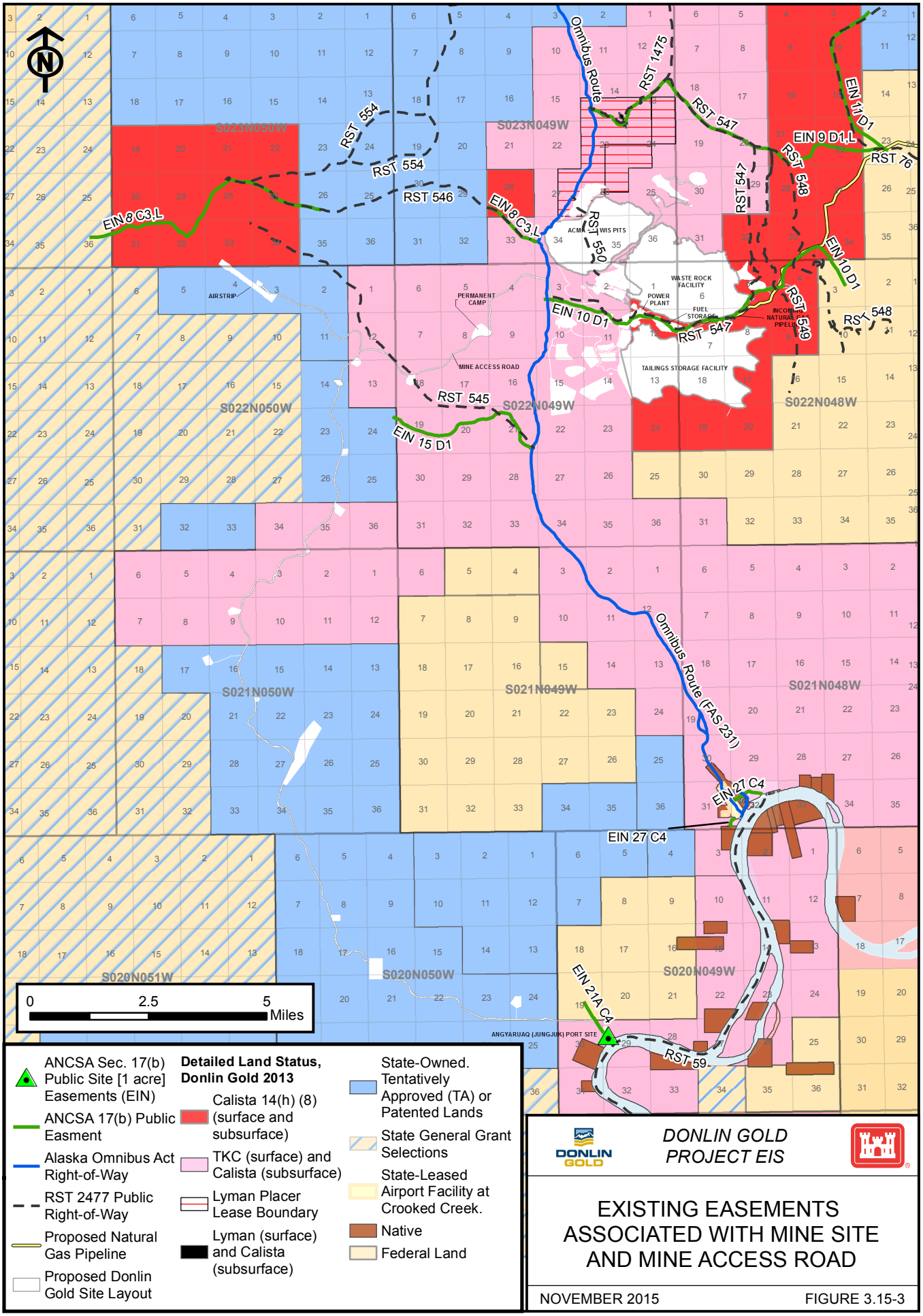
One omnibus route (FAS 231) is in the vicinity of the proposed Project Area. It connects the Village of Crooked Creek to the Villages of Flat and Iditarod to the north.

3.15.1.5.6 ANILCA ACCESS PROTECTIONS

ANILCA Section 811 protects access to federal public lands for subsistence purpose, including use of “snowmobiles, motorboats, and other means of surface traditionally employed.” ANILCA Section 1316 authorizes use of temporary campsites, tent platforms and shelters. Other ANILCA access protections refer to Congressionally-designated Wilderness, but no such lands fall within the Project Area. For the BLM-managed lands within and adjacent to the Project Area it is assumed that these ANILCA-protected uses and facilities, including: snowmachine and motorboat use; airplane landings; temporary structures related to hunting, fishing and trapping; and public use cabins will be maintained.

3.15.1.5.7 FLPMA ROW AUTHORITIES

Title V of the Federal Land Policy Management Act (FLPMA) grants the BLM authorization to grant, issue, or renew ROWs for trails or other means of transportation. In designating ROW corridors and in determining whether to require that ROWs be confined to them, national and state land use policies, environmental quality, economic efficiency, national security, and safety will be taken into consideration (FLPMA sections 501 and 503).



ANCSA Sec. 17(b) Public Site [1 acre] Easements (EIN)

ANCSA 17(b) Public Easement

Alaska Omnibus Act Right-of-Way

RST 2477 Public Right-of-Way

Proposed Natural Gas Pipeline

Proposed Donlin Gold Site Layout

Detailed Land Status, Donlin Gold 2013

Calista 14(h) (8) (surface and subsurface)

TKC (surface) and Calista (subsurface)

Lyman Placer Lease Boundary

Lyman (surface) and Calista (subsurface)

State-Owned. Tentatively Approved (TA) or Patented Lands

State General Grant Selections

State-Leased Airport Facility at Crooked Creek.

Native

Federal Land

DONLIN GOLD

DONLIN GOLD PROJECT EIS

EXISTING EASEMENTS ASSOCIATED WITH MINE SITE AND MINE ACCESS ROAD

NOVEMBER 2015

FIGURE 3.15-3

3.15.2 AFFECTED ENVIRONMENT

3.15.2.1 LAND OWNERSHIP AND USE

General orientation to land ownership is provided through land status maps in Figure 3.15-1A through Figure 3.15-1E above.

3.15.2.1.1 MINE SITE

Land Ownership

About half of the proposed mine site (4,370.6 acres) is located on land with surface rights held by TKC and subsurface rights held by Calista. The remaining portion of the proposed mine site (4,575.7 acres), including the 463 acres of the Lyman placer lease area within the proposed mine site footprint, is located on land with both surface and subsurface rights held by Calista. In total, 8,946.3 acres are affected.

There are six Section 17(b) easements that are in the vicinity of the mine site (see Table 3.15-2; and Figure 3.15-3). These 17(b) easements are access rights to cross Calista and TKC lands, and the easements are managed by the BLM. Three of these Section 17(b) easements would need to be vacated or relocated as a result of the proposed project: EIN 8 C3 L, EIN 10 D1, and EIN 9D1 L. For the BLM to vacate, or terminate a Section 17(b) easement, the action would be subject to public notice and comment. After reviewing comments and determining the necessity of the easement, the BLM issues an appealable decision. To relocate a Section 17(b) easement, the BLM evaluates alternative routes and issues an appealable decision based on the public interest.

The Omnibus Route (FAS 231) from Crooked Creek to Flat would also be affected by the mine site, and would likely need to be relocated to maintain the ROW (Figure 3.15-3). Many of the 17(b) easements identified above are connected to or initiate from the affected Omnibus Route. In the event that the Omnibus Route is relocated, multiple of the 17(b) easements would also need to be adjusted to maintain public access to the east and west of the proposed mine site. These administrative actions would generally insure that equivalent public access would be provided.

Seven R.S. 2477 ROWs are in the vicinity of the mine site (see Table 3.15-1; and Figure 3.15-3). Alternative access may be required, and the state may dedicate alternative easements on state land.

Land Use

Land development within the Kuskokwim River drainage is generally limited to the areas in and around geographically isolated communities, small fishing and hunting lodges, and mining operations. Developments include roads, airstrips, and docks. In the 3.4 million acres located around the mine site and along the mine access road corridor, there is less than 10,000 acres of disturbance from an airstrip, camp, drilling pads, and drilling access roads (ARCADIS 2013a).

Approximately 14 square miles (9,000 acres) of land would be used for the mine site during operations. There is no overland access currently, but the mine site does have about 17 miles of exploratory roads (Donlin Gold 2012), a 5,000-foot long airstrip, and a camp that can accommodate up to 160 people (SRK 2012a).

Residential and commercial land use in the vicinity of the mine site is limited and includes the community of Crooked Creek, located 10 miles south of the mine site. The small village of Crooked Creek has a population of approximately 90 people, many of whom practice a lifestyle reliant on subsistence activities (DCCED 2014a).

Subsistence and recreational hunting and fishing occur in the general vicinity of the mine site (see Sections 3.16, Recreation, and 3.21, Subsistence for details). In addition, mining-related activities are found in the vicinity of the mine site and throughout the Kuskokwim River drainage, and most of these areas have been mined since at least the early 1900s. Most of the active mines (including the currently operational mine located on Crooked Creek and tributaries upstream of the current Donlin Gold exploration area) are placer operations, and generally are quite small in physical and economic scale (ARCADIS 2013a).

The Project Area does not contain prime farmland, prime forest land, or prime rangeland. In addition, no unique farmlands or farmlands of statewide importance have been designated in Alaska. Important farmland, prime forest land, and prime rangeland receive protection from the Farmland Protection Policy Act (FPPA) and U.S. Department of Agriculture (USDA) Departmental Regulation No. 9500-3, Land Use Policy. The USDA regulation, 7 CFR Part 658, implements the FPPA. Whereas the construction and operations ROWs for the proposed pipeline would affect soils designated as farmlands of local importance by the MSB, the mine site would not occur on or within the vicinity of farmlands of local importance.

3.15.2.1.2 TRANSPORTATION FACILITIES

Land Ownership

As shown in Table 3.15-4, more than half (58 percent) of the area that would be intersected by the proposed transportation facilities under the proposed action consists of state-owned, tentatively approved, or patented lands. The transportation facilities would also be located on patented or interim conveyed lands with surface rights held by TKC and subsurface rights held by Calista (40 percent). Approximately one percent of the area intersected by the proposed land-based transportation facilities would be interim conveyed lands with both surface and subsurface rights held by Calista. Comparative acreages for Alternative 3B, which would include facilities on Tyonek Native corporation/CIRI land, and for Alternative 4, which includes the longer BTC mine access road, are shown in Table 3.15-4. Under Alternatives 3A, 3B, 5A, and 6A the number of acres affected by transportation facilities would remain the same as Alternative 2.

Table 3.15-4: Land Status of the Locations of the Transportation Facilities

Surface Ownership	Alternatives 2, 3A, 5, & 6 (Acres)	Alternative 3B (Acres)	Alternative 4 (Acres)
Calista Corporation (Surface and Subsurface)	15.3[1] (2%[2])	15.3 (2%)	15.3 (1%)
State-Owned, Tentatively Approved, or Patented Lands	573.7 (66%)	573.7 (65%)	315.5 (18%)

Table 3.15-4: Land Status of the Locations of the Transportation Facilities

Surface Ownership	Alternatives 2, 3A, 5, & 6 (Acres)	Alternative 3B (Acres)	Alternative 4 (Acres)
The Kuskokwim Corporation (surface) and Calista Corporation (subsurface) Patented or Interim Conveyed Lands	276.8 (32%)	276.8 (31%)	489.9 (28%)
BLM (State Selected)	0.0 (0%)	0.0 (0%)	913.9 (53%)
Tyonek Native Corporation/CIRI		13.5 (2%)	
Total:	**865.8**	**879.3**	**1,734.5**

Notes:

1 Values rounded to one decimal place.
2 Values are rounded to nearest whole percentages.

Source: Donlin Gold 2013b.

The barge transportation activities may affect upland owners along the Kuskokwim River. As described previously, the bed of the Kuskokwim River below the ordinary high water mark is owned by the State of Alaska. The National Hydrography Dataset (NHD) was used to determine the ownership of lands above the ordinary high water mark within a 100-foot buffer of the Kuskokwim River mainstem and major channels along the river corridor. As shown in Table 3.15-5, lands along the river corridor primarily consist of ANCSA Corporation patented or interim conveyed lands and Alaska Native allotments. Other lands adjacent to the river corridor include Alaska Native Corporation selected lands, state patented lands, and land managed by the U.S. Department of Defense. Under Alternative 2, some 900.9 miles of river banks with upland owners would be affected. (This figure includes multiple river banks in places where the river splits into separate channels.) Under Alternative 4, with the upriver port located at BTC, the overall extent of affected lands along the river corridor would be reduced to 613.3 miles, a difference of 287.6 miles. Under Alternatives 3A, 3B, 5A, and 6A the number of miles of lands affected by the river corridor would remain the same as Alternative 2.

Table 3.15-5: Land Status along the Transportation Facilities/River Corridor

Surface Ownership	Alternatives 2, 3A, 3B, 5A, & 6A (Length in Miles)[1]	Alternative 4 (Length in Miles)
BLM-managed State Selections	0.4[2] (<1%[3])	0.4 (<1%)
U.S. Department of Defense	1.9 (<1%)	1.9 (<1%)
ANCSA Corporation Selected	21.5 (2%)	1.4 (<1%)
State Tentatively Approved, or Patented Lands	13.7 (2%)	8.4 (1%)
Alaska Native Allotment	117.8 (13%)	90.9 (15%)

Table 3.15-5: Land Status along the Transportation Facilities/River Corridor

Surface Ownership	Alternatives 2, 3A, 3B, 5A, & 6A (Length in Miles)[1]	Alternative 4 (Length in Miles)
ANCSA Corporation Patented or Interim Conveyed	745.0 (83%)	510.7 (83%)
Total:	**900.9**	**613.3**

Notes:

1 Miles refer to banks on both sides of the river, as well as braided channels.
2 Values rounded to one decimal place.
3 Values are rounded to nearest whole percentages.

Source: Donlin Gold 2013b.

There are two Section 17(b) easements and one R.S. 2477 ROW in the vicinity of the Angyaruaq (Jungjuk) Port (see Table 3.15-1 and Table 3.15-2, respectively). The two Section 17(b) easements would need to be vacated or relocated as a result of the proposed project: EIN 21 C4 and EIN 21A C4. For the BLM to vacate, or terminate a Section 17(b) easement, the action would be subject to public notice and comment. After reviewing comments and determining the necessity of the easement, the BLM issues an appealable decision. To relocate a Section 17(b) easement, the BLM evaluates alternative routes and issues an appealable decision based on the public interest.

The fuel storage in Dutch Harbor would mainly be located on existing infrastructure, however, there would likely need to be an additional development of four to six acres. A contracted third party would be responsible for the transportation and development, and therefore the specifics would be determined during final project design. The upland expansion of the Bethel Dock Yard would occupy 12 acres under lease from an individual land owner. The fuel tanks in Bethel are planned to be constructed within the existing fuel tank farm.

Land Use

Existing land use within southwest Alaska is largely limited to residential and commercial facilities in the few permanent villages in this region, temporary encampments along the Kuskokwim River, and industrial activity at the small mines that are found throughout the region. Subsistence and recreational hunting and fishing occur widely, as discussed in Sections 3.16, Recreation and 3.21, Subsistence. Land use is generally limited by the small population of southwest Alaska (ARCADIS 2013a).

The Angyaruaq (Jungjuk) Road and Angyaruaq (Jungjuk) Port site are located in a remote area. The closest community to these facilities is Crooked Creek. Similarly, the BTC Road and Port is also located in a remote area. The closest community to these facilities is Aniak.

Residential and commercial land use in the vicinity of the transportation facilities / river corridor includes largely concentrated, widely scattered permanent settlements along the corridor (Napakiak, Napaskiak, Oscarville, Bethel, Kwethluk, Akiachak, Akiak, Tuluksak, Lower Kalskag, Upper Kalskag, Aniak, and Chuathbaluk). The largest and most urbanized of these is Bethel, with a population of approximately 6,113 (DCCED 2014b). The expansion of the Dutch Harbor fuel storage and Bethel Port facility would be subject to existing land uses and management objectives. There are numerous small, seasonal camps located along the

Kuskokwim River corridor, which are used during the summer months for the subsistence harvest of salmon and other fish. They may also be used during hunting seasons (ARCADIS 2013a).

Industrial activity is limited throughout the region and largely consists of small-scale mining, fish processing, and cargo transfer. Industrial activity in Bethel is largely related to fish processing and the transfer of cargo and fuel from oceangoing barges to river barges capable of reaching upstream villages; these activities generally are separate from the community and concentrated along the riverfront (ARCADIS 2013a).

No agricultural areas were identified within the vicinity of the transportation facilities. The transportation facilities would not occur on or within the vicinity of farmlands of local importance.

3.15.2.1.3 PIPELINE

Land Ownership

Proposed Construction ROW

Under Alternative 2, approximately 5,734.3 acres would be intersected by the proposed 150-foot pipeline construction ROW. For Alternative 3B, the total construction ROW acreage would be 6,071.2 due to the additional segment to reach the diesel fuel dock. For Alternative 6A, approximately 5,711.8 acres would be intersected by the proposed 150-foot pipeline construction ROW. Table 3.15-6 shows land ownership for areas that would be located within the proposed ROW for both pipeline routing alternatives.

Table 3.15-6: Land Status in the Pipeline Construction ROW

Surface Ownership	Alternatives 2, 3A, 4 & 5A (Acres)	Alternative 3B (Acres)	Alternative 6A (Acres)
Calista Corporation Interim Conveyance or Patented Lands	98.5[1] (2%[2])	98.5 (2%)	98.5 (2%)
Cook Inlet Region Inc. Interim Conveyance Lands	113.3 (2%)	220.1 (4%)	176.6 (3%)
Tyonek Native Corporation/CIRI (Surface/ Subsurface)		68 (1%)	
Native Village of Tyonek		0.7 (<1%)	
Federal (BLM) Lands	1,771.5 (31%)	1,773.8 (29%)	1,771.5 (31%)
State-Owned, Tentatively Approved, or Patented Lands	3,750.0 (65%)	3,812.6 (63%)	3,664.2 (64%)
Kenai Peninsula Borough		90 (1%)	
Private Land or State Land Disposals	0.9 (<1%)	5.2 (<1%)	0.9 (<1%)

Table 3.15-6: Land Status in the Pipeline Construction ROW

Surface Ownership	Alternatives 2, 3A, 4 & 5A (Acres)	Alternative 3B (Acres)	Alternative 6A (Acres)
Alaska Native Allotments		2.2 (<1%)	
Total:	**5,734.3**[1]	**6,071.2**[1]	**5,711.8**[1]

Notes:

1 Values rounded to one decimal place.
2 Values are rounded to nearest whole percentages.

Source: Donlin Gold 2013c

As shown in Table 3.15-6, for Alternative 2 more than half (65 percent) of the land within the construction ROW is managed by the State of Alaska, predominantly as state-owned, tentatively approved, or patented lands. Oil and gas leases on state lands are held by Cook Inlet Energy, LLC and Hilcorp Alaska, LLC near the beginning of the pipeline (MP 0 to MP 5). For Alternative 6A, the construction ROW would be within approximately 3,664 acres of land managed by the State of Alaska, a difference of 85.8 acres.

ADNR administers the Remote Recreational Cabin Site program which enables Alaska residents to stake a parcel of state land in a designated remote staking area and to lease the land until ADNR completes a survey and appraisal of the staking area. Upon completion of the survey and appraisal, participating residents are given the opportunity to purchase the land at market value (11 AAC 67.800 – 67.850). The Happy River Remote Recreation Cabin Staking Area is located within the construction ROW.

The ADNR Division of Mining, Land, and Water (DMLW) periodically conducts land disposals, including sealed-bid auctions of state subdivided land and over-the-counter sales for parcels that remain unsold after the sealed-bid auctions are complete. Parcels within the Shell Hills Subdivision, which would be intersected by the construction ROW of the proposed pipeline, are being offered for sale through the over-the-counter process. In addition, a small amount of land (less than half an acre) within the proposed construction ROW has been contracted for sale through the land disposal process.

Within the proposed pipeline construction ROWs are State of Alaska leasehold locations held by Charles Poulson and Last Chance, and State of Alaska mining claims held by Geoinformatics Alaska Exploration, Inc.; Tommy Partee, DBA Nuway Mining Company; and Chedatna Lakes. These leasehold locations and mining claims are administered by the ADNR DMLW.

Both proposed pipeline construction ROWs (Alternative 2 and Alternative 6A) would be located in the vicinity of or would intersect the INHT ROW on state lands between MP 50 and MP 148.

A portion of the western segment of both pipeline routes, starting at about MP 169, is located on BLM-managed lands. Some of this land (west of MP 263) has been selected by the state under the Alaska Statehood Act.

Alaska Native regional corporation-owned lands would be intersected by the proposed pipeline construction ROW. Parcels with surface and subsurface rights owned by Calista would be intersected between MP 310 and the pipeline terminus at the mine site, and parcels with surface and subsurface rights owned by CIRI would be intersected between MP 150 and MP 156.

In addition to the easements and ROWs that would be affected by the operations pipeline ROW, there is one R.S. 2477 ROW and one easement that would be affected by the construction ROW. Affected easements include RST 549, a R.S. 2477 ROW along the Dome Creek-Bell Creek Ridgetop Trail, and ADL 230122, a state public access easement for the INHT, that runs from Puntilla Lake to Rohn.

Operations ROW

Approximately 1,922.7 acres would be encumbered by the proposed pipeline operations ROW, based on a 50-foot ROW with a 51-foot, 2-inch ROW on BLM-managed lands. The pipeline operations ROW for Alternative 6A would occupy approximately 1,918.3 acres. Table 3.15-7 shows the current landownership within the proposed ROW. A 50-foot ROW was used on all lands except BLM-owned lands; on BLM-owned lands a ROW of 51 feet and 2 inches was used.

Table 3.15-7: Land Status within the Pipeline Operations ROW

Surface Ownership	Alternatives 2, 3A, 4, & 5A (Acres)	Alternative 3B (Acres)	Alternative 6A (Acres)
Calista Corporation Interim Conveyance or Patented Lands	32.8[1] (2%[2])	32.8 (2%)	32.8 (2%)
Cook Inlet Region Inc. Interim Conveyed	37.9 (2%)	73.7 (4%)	59.0 (3%)
Tyonek Native Corporation/CIRI (Surface/ Subsurface)		22.5 (1%)	
Native Village of Tyonek		0.2 (<1%)	
Federal (BLM) Lands	599.9 (31%)	599.9 (29%)	599.9 (31%)
State-Owned, Tentatively Approved, or Patented Lands	1,252.2 (65%)	1,273.6 (62%)	1,226.6 (64%)
Private	0.0002 **(<1%)**	0.8 **(<1%)**	0.0002 **(<1%)**
Kenai Peninsula Borough		31.2 (2%)	
Alaska Native Allotments		0.4 (<1%)	
Total:	**1,922.7**	**2,034.4**	**1,918.3**

Notes:

1 Values rounded to once decimal place.
2 Values are rounded to nearest whole percentages.

Source: Donlin Gold 2013c.

As with the proposed construction ROW under Alternative 2, nearly two-thirds (65 percent) of the land within the operations ROW is managed by the State of Alaska. Similarly, approximately 64 percent of the land is managed by the State of Alaska within the operations ROW under Alternative 6A. Under Alternatives 3A, 3B, 4, and 5A, the number of miles of lands affected by the pipeline operations ROW would remain the same as Alternative 2. While the pipeline operations ROW is smaller than for the construction ROW, the description of

applicable land status types provided above for the construction ROW also applies to the operations ROW. A separate authorization would be required for a ROW collocation in an existing utility easement issued by ADNR, as well as a letter of non-objection from the easement grantee.

As shown in Table 3.15-1, Table 3.15-2, and Table 3.15-3, the proposed operations pipeline ROW would cross seven R.S. 2477 ROWs, two Section 17(b) easements, and six state public access easements.

Ancillary Facilities

As shown in Table 3.15-8, the ancillary facilities associated with the construction of the proposed pipeline under Alternative 2, including airstrips, material sites, worker camps, pipe storage yards, temporary horizontal directional drilling (HDD) workspace, and work pads would be located on land managed by the State of Alaska (72 percent), the BLM (17 percent), and the Federal Aviation Administration (6 percent). The remaining 3 percent of lands proposed for material sites, a pipe storage yard, and a work pad would be located either on CIRI interim conveyed surface and subsurface estate or CIRI interim conveyed surface (including sand and gravel) and State of Alaska subsurface estate (excluding sand and gravel). Under Alternatives 3A, 3B, 4, and 5A the number of acres affected by ancillary facilities would remain the same as Alternative 2. Table 3.15-8 shows the differences between Alternative 2 and Alternative 6A.

Table 3.15-8: Land Status of Ancillary Facilities for Construction ROW

Surface Ownership	Alternatives 2, 3A, 3B, 4, & 5A Acres	Alternative 6A Acres
Cook Inlet Region Inc. Interim Conveyed	71.2 (3%[1])	43.4 (2%)
Federal Aviation Administration (Farewell Airstrip ANS 189)	139.9 (6%)	139.9 (7%)
Federal Lands (BLM)	422.2 (19%)	422.1 (21%)
State-Owned, Tentatively Approved, or Patented Lands	1,589.2 (72%)	1451.9 (71%)
Total:	**2,222.7**	**2057.5**

Notes:

1 Values are rounded to nearest whole percentages.

Source: Donlin Gold 2013c.

The proposed transmission line ROW, utilized under Alternative 2 and 6A, would primarily cross state-owned, tentatively approved, or patented lands and CIRI interim conveyed surface (including sand and gravel) and State of Alaska subsurface estate (excluding sand and gravel). In addition, State of Alaska leasehold locations held by Tommy Partee, DBA Nuway Mining Company, and Chedatna Lakes and oil and gas leases held by Union Oil Co. of California and Conoco Phillips Alaska, Inc. occur within the ROW of the proposed transmission line. Lands

withdrawn by ANS 189 to the Federal Aviation Administration would need BLM authorization for uses outside of the withdrawal purposes.

Land Use

Existing land use along the proposed pipeline route generally is confined to the easternmost portion in the Cook Inlet drainage. Land use and development along the western segment of the proposed pipeline route outside the mine site is limited. There are no villages or other communities within 10 miles of any portion of the proposed pipeline route or the route identified under Alternative 6A. Scattered habitation may be found in association with small-scale mining activities, hunting/trapping cabins, on native allotments, or in areas where past state land disposals have been conducted (ARCADIS 2013a).

Land use and developments along the eastern segment of the proposed pipeline route are more numerous, although widely scattered. In consideration of existing lodges and other development in the region, the proposed pipeline route is designed to avoid private lands and commercial enterprises. In the Alaska Range, the proposed pipeline route is located in the vicinity of the Rainy Pass Lodge (which is inhabited year-round). As the proposed pipeline route exits the Alaska Range, development is more common, consisting of widely scattered lodges and private cabins near the mouth of the Talachulitna River and along Shell Lake. The proposed pipeline route occurs in the vicinity of, but away from, some residences of the year-round communities of Skwentna and Beluga, as well as recreational cabins (ARCADIS 2013a).

Industrial activity along the eastern segment of the proposed pipeline route is concentrated in the vicinity of its terminus, where the pipeline enters an area used extensively by oil and gas operators. This region is characterized by a network of roadways providing access to oil and gas production pads, pipelines, and processing facilities. Additionally, Chugach Electric's 385-megawatt (MW) Beluga power plant and electric transmission lines are found near the southern terminus of the proposed pipeline route. Two 230-kilovolt (kV) transmission lines and one 138-kV transmission line currently run perpendicular to the southern terminus of the corridor at a distance of approximately 900 feet (ARCADIS 2013a).

There is only one known instance of permanent land use along the pipeline, which is a cabin located approximately 1,000 feet from the proposed pipeline alignment (ARCADIS 2013a).

No agricultural areas were identified within the vicinity of the proposed pipeline route. However the construction and operations ROWs for the eastern part of the proposed pipeline for all alternatives cross over soils designated as farmlands of local importance by the MSB. The construction and operations ROWs would affect approximately 175 acres and 88 acres of farmland of local importance, respectively. Farmland of local importance has the capability of producing food, feed, fiber, forage, and/or oilseed crops but does not meet the criteria for prime farmland, unique farmland, or farmland of statewide importance.

3.15.2.1.4 CLIMATE CHANGE

Erosion is an effect to land ownership attributed to climate change. A September 2015 erosion event was attributed to climate change in the EIS Analysis Area. The event involved rapid bank erosion, or mass wasting, on the Kuskokwim River at Akiak. The episode was described as an "extreme erosional event" (Alaska Dispatch News 2015a). Permafrost has thawed as temperatures have risen, creating less stable soils more subject to erosion.

Land management and uses have been and will continue to be affected to the extent that other resources have been affected, as described in Section 3.26, Climate Change, including: climatic conditions (atmosphere), water resources, permafrost, and vegetation and wetlands. Changes in land management and uses could result from warmer air temperatures, more high-intensity rainfall events, changes in water flows, increased ground temperatures creating permafrost thaw and settling, and changes in extent and composition of wetlands and vegetation.

3.15.3 ENVIRONMENTAL CONSEQUENCES

Potential impacts to land ownership, land management, and land use were determined by assessing the magnitude (intensity), duration, geographic extent, and context of anticipated impacts using specific impact criteria. The impact criteria used to assess each indicator are described in Table 3.15-9 below.

Table 3.15-9: Impact Criteria for Land Ownership, Management, and Use

Type of Effect	Impact Component	Effects Summary		
Land Ownership, Management, and Use	Magnitude or Intensity	**Low**: Land ownership, management, and uses would see little change, although routine administrative adjustments may be required to maintain equivalent use rights; action is consistent with existing management plans and land uses.	**Medium**: Adverse changes in land ownership or uses affect limited areas; or owner required to respond to extensive administrative processes, and use rights may be diminished; action results in moderate adjustments in existing management plans and uses.	**High**: Changes in land ownership or use are major and/or owner must respond in to substantial adverse administrative action, loses in use rights may be large. Major inconsistency forces management plan amendment.
	Duration	**Temporary**: Changes in ownership, management, or land use, do not occur, are expected to be infrequent, or last less than the construction period.	**Long-term**: Changes in ownership, management, or land use may reasonably be expected to convert (or revert) to another use frequently, over the life of the project.	**Permanent**: Changes in ownership, management, or land use are expected to have a permanent result that would last beyond the life of the project even if the actions that caused the change were to cease.
	Geographic Extent	**Local**: Impacts would be limited to the near vicinity of a project component.	**Regional**: Impacts would extend beyond a local area, affecting resources or populations throughout the EIS Analysis Area.	**Extended**: Impacts would affect resources or populations beyond the EIS Analysis Area.

Table 3.15-9: Impact Criteria for Land Ownership, Management, and Use

Type of Effect	Impact Component	Effects Summary		
Land Ownership, Management, and Use (continued)	Context	**Common**: The supply of land for an affected management category or use is extensively available, serves no specialized function, and is not identified as having special, rare, protected, or unique characteristics in an adopted management plan.	**Important**: The supply of land for an affected management category or use is moderately available, serves a specialized function, but is not identified as having special, rare, protected, or unique characteristics in an adopted management plan.	**Unique**: The supply of land for an affected or management category or use is constrained and is identified as having special, rare, protected, characteristics in an adopted management plan.

3.15.3.1 ALTERNATIVE 1 – NO ACTION

Under Alternative 1, the Donlin Gold Project would not be authorized and existing land use, ownership, and management would remain the same for the mine site, transportation facilities, and pipeline for the foreseeable future. As a result, Alternative 1 would have no effect on existing land ownership, uses, and management because the proposed Donlin Gold Project would not be implemented.

Failure to authorize the proposed Donlin Gold Project would obstruct the current management plans of Calista and TKC, the mine site land owners as established through ANCSA (see Section 3.15.1.2). As the land owners, Calista and TKC would likely propose and undertake future plans, separate from the Donlin Gold Project, independent of the results of the No Action Alternative.

Alternative 1 would have no effect on climate change in the EIS Analysis Area, as related to land ownership, management, and use.

3.15.3.2 ALTERNATIVE 2 – DONLIN GOLD'S PROPOSED ACTION

3.15.3.2.1 MINE SITE – CONSTRUCTION; OPERATIONS AND MAINTENANCE; AND CLOSURE, RECLAMATION, AND MONITORING

Land Ownership

While the lease agreements with Calista and TKC would allow Donlin Gold to occupy the mine site (approximately 8,946.3 acres) for the purposes of construction, operations and maintenance, and closure of the mine, the underlying surface and subsurface land ownership would not change.

As discussed in Section 3.15.2.1.1, the BLM would need to vacate or relocate three Section 17(b) easements (approximately 18 acres and 2.94 miles total) as a result of the proposed project. If the BLM agrees to relocate the easements, equivalent access would be provided and there would be little direct effect to the use rights of those easements. If vacated, the easement use right would change permanently; if relocated, the location of the BLM-managed 17(b) easements would

change permanently. The intensity of impacts from vacating or relocating an easement would be low due to very low existing levels of use of these easements. These easements are located on remote parcels of land, most local residents travel in the vicinity for subsistence activities, and few or no out-of-region residents would come to Crooked Creek and travel over these easements to reach more distant public lands. BLM regulations and procedures provide for a routine process to guide the BLM and to ensure public input is considered, and the likelihood that equivalent access rights would be provided. The easements in question are located near the mine site, limiting the effects of the potential change in easement use rights to a local extent. The easements are important in context as they serve a specialized function, but are not identified as having special, rare, or unique characteristics.

Land Management

Mineral production on the mine site under Alternative 2 would be consistent with Calista's stated uses for land under its management and with TKC's management objectives and overall land management direction (see Section 3.15.1.3). Furthermore, the Donlin Gold Project would, if authorized, provide shareholder employment and regional economic development, which is consistent with the purposes for which Calista manages its lands (Calista Corporation 2013a). These effects would represent beneficial implementation of the landowners' management plans. Since the proposed action is in agreement with the planned land management of the area, mine development would not result in adverse direct or indirect effects from construction, operations and maintenance, and closure of the proposed mine site on the land management programs of Calista and TKC. Closure and reclamation of the mine site would be conducted in accordance with the lease and surface use agreements between Donlin Gold, Calista, and TKC.

The proposed mine site is not located within any legislatively designated areas and would therefore have no direct or indirect effects on the management of such areas.

Land Use

Following 16 years of exploration and baseline studies, land use at the approximately 25 square mile mine site (16,000 acres) would change from a partially disturbed area to active industrial use for the 3-4 year construction period and the 27.5-year life of the mine. Given the baseline conditions, this shift to intensive industrial use would consolidate and extend changes introduced during the exploration period. This would constitute a high magnitude and long-term impact, but would be localized in extent, as it would be limited to the mine site. In context, these are private lands with special and rare mineral characteristics uniquely suited for mining and economic development relative to other Calista and TKC lands. As a result, the development of the lands is a priority for Calista and TKC and therefore would be unique in context. Apart from the exploration and baseline studies work of recent years, there is very little other current economic use of these lands. As a result, the change to intensive industrial use would be beneficial from the vantage point of the land owner and would not create a land use conflict with current uses.

During mine closure, many project features and facilities would be removed and the ground would be graded, re-contoured, and covered with stockpiled topsoil. The area would be revegetated with native plant species. Some project equipment, such as mobile equipment and vehicles, would be buried within the Waste Rock Facility (WRF), but this is not expected to affect land use upon closure. Similarly, road materials would be buried within previously

affected areas, such as road ditches and depressions, but would have a limited effect on future use. The Tailings Storage Facility (TSF) would be drained prior to capping, re-contouring, and re-vegetation. Post-closure land use would be wildlife habitat, recreation, and subsistence. The open mine pit would remain in place, filling with water to form a permanent pit lake (see Section 3.7, Water Quality).

The 3.5 square mile WRF, recontoured and revegetated during reclamation, would continue to be a landscape feature after closure. It would be suitable for non-ground disturbing land uses such as wildlife habitat and recreation. After reclamation, the 3.6 square mile TSF would support similar uses as existed pre-mining. The WRF would need to remain undisturbed below the surface to ensure that the isolated cells containing potentially acid-generating (PAG) material remain intact. Similarly, the TSF would need to remain undisturbed due to the consolidated tailings below the vegetation and engineered top-soil and overburden cap. Due to the underlying materials in some areas after closure (e.g., waste rock, PAG material, buried equipment, and consolidated tailings), and remaining infrastructure needed for monitoring, parts of the site would not be suitable for new development. However, the probability of new development (residential, industrial, or commercial development) in the area is low, and post-mining uses proposed for the Project Area are for wildlife habitat and recreation (Donlin Gold 2012). Since existing land uses such as wildlife habitat and subsistence would be suitable for the site post-mining, potential impacts to land use would be considered low intensity. These land uses are widespread within the region and therefore impacts would affect land resources that are common in context. Impact to land use would be local; impacts would not extend beyond the mine site. However, these direct impacts would extend beyond the life of the mine and therefore would be permanent. The mine site could not be used for other developments as an indirect impact, but the probability of another large-scale development in this area is unlikely.

Land uses within the vicinity of the mine site include placer mining activities to the north. Donlin Gold has negotiated agreements with the placer operator and Calista that would result in suspension of operations at the placer mine site with implementation of the project. There are no other anticipated changes to commercial or residential land uses within the Crooked Creek watershed as a result of the proposed project.

Other uses that may be affected by construction, operations and maintenance, and closure of the proposed mine include recreation and subsistence use. The distribution of these uses and potential impacts of the project on these resources are described in Section 3.16, Recreation, and Section 3.21, Subsistence.

Mine Site Summary

Under Alternative 2 there would be direct impacts of high intensity due to the large change in land use from minimally developed lands with mineral exploration activities and infrastructure to intensive industrial use at the mine site (8,946.3 acres). While there would be a low intensity impact from the relocation or vacation of 17(b) easements (approximately 18 acres and 2.94 miles), the predominant direct and indirect impacts for the mine site would be high intensity and beneficial given the large shift in land use, which would be positive from the vantage point of the land owner. There would be no effect to land management plans by the proposed mine site. Direct and indirect effects would be long-term to permanent in duration. Changes in land use are at the mine site would revert after closure to nearly pre-mining levels, except for the pit lake and residual transportation infrastructure, while changes in use rights associated with

17(b) easements would be permanent. Impacts to 17(b) easements and changes to land use would occur to lands at the mine site, but not beyond; therefore, direct and indirect impacts would be local in extent. The special mineral characteristics of the mine site, relative to other Calista and TKC lands, make the overall context of impacts to land use unique, while the context of 17(b) easements would be important.

3.15.3.2.2 TRANSPORTATION FACILITIES – CONSTRUCTION; OPERATIONS AND MAINTENANCE; AND CLOSURE, RECLAMATION, AND MONITORING

Land Ownership

Under Alternative 2, lease agreements with the State of Alaska, Calista, and TKC would allow Donlin Gold to construct, operate, and close the proposed transportation infrastructure would affect 865.8 acres, but the underlying surface and subsurface land status would not change. The new sheetpile dock at the Knik Construction site would occupy 3.2 acres, mostly State of Alaska tide and submerged lands, but also including a portion leased from an individual. The upland expansion of the Bethel Dock Yard would occupy 12 acres under lease from an individual land owner. The fuel tanks in Bethel are planned to be constructed within the existing fuel tank farm.

As discussed in Section 3.15.2.1.2, two Section 17(b) easements (approximately 0.56 acres and 0.18 miles) would need to be relocated or vacated as a result of the proposed project. If the BLM agrees to relocate or vacate the easements, there would be direct effects to the use rights of those easements. If vacated, easement use rights would change permanently; if relocated, the location of the BLM-managed 17(b) easement would change permanently, but equivalent access would be provided through routine administrative processes. The intensity of relocating or vacating an easement would be low, as at the mine site. The easements in question are located at the site of the proposed Angyaruaq (Jungjuk) Port, limiting effects of the potential easement changes to a local extent. The easements are important in context as they serve a specialized function, but are not identified as having special, rare, or unique characteristics.

Land Management

Under Alternative 2, portions of the transportation facilities developed to support infrastructure to the mine site would be located on Calista, and TKC lands. These proposed facilities would be consistent with Calista's stated land uses under its management, which include mineral production (Calista Corporation 2013a), and with TKC's management objectives and overall land management direction (see Section 3.15.1.3). The proposed expansion of the Bethel Port facility on State of Alaska and private leased lands would also conform to existing land uses and management objectives (see Section 3.15.1.3).

Therefore, construction, operations, and closure of the transportation facilities proposed in Alternative 2 would have no effect on Calista's or TKC's planned land management. Closure of the proposed transportation facilities would include removal of the Angyaruaq (Jungjuk) Port infrastructure, but the Donlin-Jungjuk Road and airport would remain for monitoring activities. The Bethel Port facility would be retained following closure and continue providing support for commercial barging activities. Reclamation of the Angyaruaq (Jungjuk) Port infrastructure would be conducted in accordance with the lease and surface use agreements Donlin Gold would establish with Calista and TKC, as would any post-closure use of remaining infrastructure.

Portions of the proposed transportation facilities, including the Donlin-Jungjuk Road, the airstrip, and the Angyaruaq (Jungjuk) Port Site, would occur on 573.7 acres of land managed by the State of Alaska and governed by the Kuskokwim Area Plan. As described in Section 3.15.1.3, these transportation facilities would occur on lands within management units identified to be retained in public ownership and managed for multiple uses. Therefore, the Kuskokwim Area Plan does not preclude construction, operations and maintenance, or closure of the transportation facilities. Furthermore, Alternative 2 is consistent with the plan's management guidelines pertaining to the development of transportation and utility corridors, when impact-reducing design features and mitigation measures outlined within this EIS are taken into account. As a result, no direct or indirect effects to the state's land use planning and management provisions would occur.

Under Alternative 2, there would be no physical, project-related transportation infrastructure developed within or immediately adjacent to the Yukon Delta National Wildlife Refuge (NWR) or other legislatively designated areas. Project-related activities (i.e., barge traffic) would be limited to the navigable waters of Kuskokwim Bay and the Kuskokwim River, which are not subject to the jurisdiction of the Yukon Delta NWR. Therefore, there would be no direct or indirect effects from construction, operations and maintenance, and closure of the proposed transportation facilities on the management of this or any other legislatively-designated area.

Barge traffic will generate propeller wash and wakes that may contribute to riverbank erosion between Bethel and the Angyaruaq (Jungjuk) Port. Throughout this corridor, the uplands are owned by various Alaska Native Village Corporations (surface) and Calista (subsurface). The Kuskokwim River is a very dynamic water system, with the breakup of winter river ice generating tremendous force along the river banks. High water periods through the summer also sculpt the river channel. Barge traffic would add to these forces acting on the river banks and affecting the interests of the upland owners. Below Bethel, the upland owners include some ANCSA village corporations, and the Yukon Delta NWR. The Kuskokwim River is wider in these reaches, and the lower volume of ocean-going barge traffic associated with the Donlin Gold Project is unlikely to contribute to river bank erosion. See Section 3.2, Soils, and Section 3.5, Surface Water Hydrology, for more detailed information.

The general cargo terminal proposed under Alternative 2 would be located within an area governed by the Bethel Comprehensive Plan (City of Bethel 2011). The plan calls for the completion of the 2010 Port of Bethel Expansion Feasibility Study recommendations in the event that the Donlin Gold Project is built. These recommendations, to be completed through 2031, would go beyond improvements proposed in the absence of the proposed mine and would include the following:

- Additional fuel capacity of 3 to 4 million gallons to accommodate increased residential and commercial demand,
- Petro Dock Expansion, and
- The expansion of the Port by 16.1 acres to handle overall cargo needs.

Development of the Alternative 2 general cargo terminal would directly result in the expansion of the Bethel port facilities by 16.1 acres from an existing 9 acres, thereby resulting in a direct change in land use, as discussed in Section 3.15.2.1.2. There would be no direct or indirect effects, however, from development of the cargo terminal to the city's land use planning because the general cargo terminal development has already been considered by the City of

Bethel in its comprehensive plan. Additional fuel storage capacity, estimated at 10 Mgal, would be required in Bethel, most likely within the existing fuel tank farm.

Land Use

Existing land uses within the vicinity of the proposed transportation facilities are described in Section 3.15.2, Affected Environment, and include subsistence use (including seasonal fish camps along the Kuskokwim River), recreational use, existing transportation activities, small-scale mining activity, residential and commercial facilities within the City of Bethel and villages on the Kuskokwim River, and industrial activity surrounding the Port of Bethel and the Dutch Harbor port facilities. The potential impacts of Alternative 2 on recreational, subsistence, and transportation uses, including impacts associated with barging activities along the Kuskokwim River, are described in Section 3.16, Recreation; Section 3.21, Subsistence; and Section 3.23, Transportation.

Current land use at the proposed airstrip, along the access road, and at the Angyaruaq (Jungjuk) Port would change from 865.8 acres of undeveloped lands to active industrial use for the entire life of the mine. These facilities would remain in place upon closure to support monitoring activities, with the exception of Angyaruaq (Jungjuk) Port, which would be decommissioned at closure. These remaining features would constitute a permanent shift from an undisturbed landscape with low level of intermittent use to transportation infrastructure in support of industrial use. These direct and indirect impacts from transportation facilities would constitute a high intensity shift in land use during construction and operations; however, the intensity of use would drop to low during the closure period. Direct effects to land use for transportation facilities would be a permanent impact (beyond the life of the mine), and would be distributed throughout the region, and therefore regional in extent. Given the abundance of undisturbed land in the region impacts from the proposed airstrip, access road, and Angyaruaq (Jungjuk) Port would affect resources that are common in context. Direct and indirect effects associated with the expansion of the Bethel Port Facility and Dutch Harbor port would also be considered common in context as lands are extensively available and do not serve a specialize function at this time.

Under Alternative 2, construction, operations, and closure of the proposed transportation facilities would not affect small-scale mining activities or residential uses in surrounding communities. Existing small-scale mining activities, such as placer mining or existing mining claims, would not be directly or indirectly affected by the proposed road or changes to the Port of Bethel.

As stated previously, development of the cargo terminal would directly result in the expansion of the Port of Bethel (from 9 acres to 16.1 acres). The expansion of fuel storage in Bethel and Dutch Harbor would most likely fall within the existing tank farms. The effect would be a permanent change in land use, with operations of the new port facilities anticipated to continue in perpetuity. The port expansion would occur by instituting a new river-side land use, with expanded docking facilities, which would constitute an impact of moderate intensity, of permanent duration (beyond the life of the mine), and of localized extent (affecting only the Port of Bethel and Dutch Harbor port facilities).

Indirect effects from expansion of the port facilities could include an increase in commercial uses within the City of Bethel and Dutch Harbor to take advantage of the port expansions. This would be a generally positive, long-term effect (throughout the duration of the use of the cargo

terminal to support project construction, operations, and closure), local in extent (limited to businesses within the City of Bethel and Dutch Harbor), common in context (commercial uses already exist that support the current level of operations), and low in intensity (with any changes in commercial use most likely due to the expansion of existing businesses). Indirect effects from construction and operations of the cargo terminal would be minor.

Transportation Facilities Summary

The direct and indirect impacts under Alternative 2 would be of high intensity due to the shift from undisturbed to an industrial use for lands along the airstrip, access road and Angyaruaq (Jungjuk) Port (865.8 acres). As with the mine site, these effects are beneficial from the standpoint of the Alaska Native land owners. In addition, low intensity adverse effects would occur to land ownership through vacation or relocation of 17(b) easements (approximately 0.56 acres and 0.18 miles) at the Angyaruaq (Jungjuk) Port, and to intermittent users of the state lands affected by the transportation facilities footprint. There would be no effect to land management plans by the proposed transportation facilities. Direct and indirect effects would be permanent, extending beyond the life of the transportation facilities, for both the change in use rights associated with 17(b) easement and the change in land use at each facility. Impacts to land use, however, would be reduced upon closure for the access road and Angyaruaq (Jungjuk) Port. Impacts to land ownership would be local in extent, but because impacts to land use are distributed at transportation facility sites across a large geographical area, the overall extent of impacts would be regional. Changes in 17(b) land ownership would be important in context but these easements are infrequently used, therefore the predominant change to land uses from transportation facilities, which would occur on lands extensively available throughout the region, would make the overall context common.

3.15.3.2.3 PIPELINE – CONSTRUCTION; OPERATIONS AND MAINTENANCE; AND CLOSURE, RECLAMATION, AND MONITORING

Land Ownership

Under Alternative 2, Donlin Gold would apply for authorization for two ROWs, temporary and long-term, for the pipeline, associated above-ground facilities, and transmission line on state, federal, Calista, and CIRI lands. The temporary (or construction) ROW (5,734.3 acres) would provide a temporary, limited interest in the land that would enable Donlin Gold to construct the pipeline and ancillary temporary construction facilities. The operations ROW (1,922.7 acres) would provide a long-term, limited interest that would enable Donlin Gold to operate, maintain, inspect, test, and terminate the pipeline within the designated easement. Additionally, the electric transmission line easement on state lands and CIRI surface estate would provide the same limited interests for construction and operations of the 8.1-mile transmission line within the designated easement. Authorization of the pipeline ROWs and the electric transmission line easement would have no direct effect on land ownership because the surface and subsurface land ownership would not change.

Alternative 2 may indirectly affect land ownership by altering future state land disposals in that some land parcels (out of 55 parcels acquired or offered) within the construction ROW or close to the operations ROW may become less desirable to purchase due to the presence of the buried pipeline. However, no state land disposals along the pipeline are currently planned. As

described in Section 3.15.2.1.3, both the construction and operations pipeline ROWs would pass close to, but not overlap with, privately held parcels in the Shell Hills Subdivision and the Happy River Remote Recreation Cabin Staking Area. Since development would be restricted temporarily within the construction ROW and long-term within the operations ROW, the likelihood of the additional parcels within the subdivision and staking area being sold to private parties may be diminished. This effect would be local (affecting only the future selling of land within the ROW), affect common resources (a small percentage of the larger Shell Hills Subdivision and Happy River Remote Recreation Cabin Staking Area), and would be low in intensity (not prohibiting future land disposals, but decreasing the likelihood of a sale).

No pipelines, power lines, or other utilities would be crossed or paralleled by the proposed pipeline. With the exception of Pretty Creek Road in the Susitna Flats State Game Refuge, which follows a public road easement, no existing maintained public roads or railroads would be crossed by the proposed pipeline. The proposed pipeline ROW would intersect or be collocated with several trails and easements, such as the INHT, 17(b) easements, R.S. 2477 routes, and section-line easements. However, the pipeline ROWs would have no direct effect on trail or easement ownership because the legal ownership and access rights would not change.

Land Management

Federal Land Management

An estimated 96.9 miles (599.9 acres) of the proposed pipeline (30 percent) temporary construction ROW would be sited on BLM-managed lands under Alternative 2. These include discontinuous parcels from about MP 169 to MP 235, and a large contiguous block from MP 244 to MP 310. The Donlin Gold Project would be consistent with the Southwest MFP (BLM 1981), which acknowledges that the development of a surface transportation network would be needed to develop renewable and non-renewable resources within the planning area. Furthermore, the Southwest MFP cites the authority of the BLM under FLPMA and the Mineral Leasing Act of 1920 to make public lands available for such purposes (BLM 1981).

As described in Section 3.15.1.1.1, the BLM is in the process of developing the Bering-Sea Western Interior RMP, which will replace portions of the Southwest MFP and guide management of those areas where project facilities would be located on or near lands managed by the BLM. The RMP is expected to provide guidance for potential demands such as major pipeline corridors, major mineral extraction projects, and transportation corridors (BLM 2013b). The BLM has prepared technical documents to support the RMP planning process, including a Wilderness Characteristics Inventory Report (BLM 2015a) and a Wildlife and Scenic River Eligibility Report (BLM 2015b). As the RMP is developed, additional analysis of impact on BLM land management from the proposed Donlin Gold Project may be necessary.

Access to the pipeline ROW for recreation may increase slightly (refer to Section 3.16.3.2.3 in Section 3.16, Recreation) in selected areas. Due to remote locations and cost of access, the increase on the ROW located on BLM-managed lands is expected to be small and the BLM would have minimal additional management action.

State Land Management

An estimated 206.6 miles (1,252.2 acres) (65 percent) of the proposed pipeline would be sited on State of Alaska managed lands under Alternative 2. As described within Section 3.15.1.3.1,

under Alternative 2, a portion of the western segment of the proposed pipeline (MP 150 through MP 315) would be located on state lands governed by the Kuskokwim Area Plan and within management units identified to be retained in public ownership and managed for multiple uses. Nothing in the state land plan precludes construction of the mine and related facilities, including the proposed pipeline. Furthermore, Alternative 2 would be consistent with the plan's management guidelines pertaining to the development of transportation and utility corridors pending the implementation of design features and mitigation measures outlined within this EIS. As a result, no direct or indirect effects would occur to the state's land use management within the area governed by the Kuskokwim Area Plan.

The use of lands managed by the State of Alaska that would be intersected by the eastern segment of the pipeline (MP 0 through MP 150) is governed by the SMAP. The management units that would be intersected by this pipeline segment are within the Mt. Susitna and Susitna Lowlands regions and land management policies for both regions include language that allows for the construction of pipelines within the region. Nothing in the SMAP precludes construction of the mine and related facilities including the proposed pipeline (ADNR 2011b) and areas where the proposed pipeline intersects the INHT on state-managed lands. With implementation of mitigation measures (refer to Chapter 5, Impact Avoidance, Minimization, and Mitigation), the proposed project would be consistent with the plan's relevant Area-wide Land Management Policies, which include the management guidelines relevant to pipeline development (described within Section 3.15.1.4.1). Therefore, no direct or indirect effects would occur to the state's land use management within the area governed by the SMAP.

The proposed pipeline would be located within the Susitna Flats State Game Refuge for approximately 5.1 miles between MP 0 to just past MP 5. The compressor station would be located in the refuge at MP 0.4. Additionally, a portion of above-ground transmission would parallel an existing electric transmission line corridor to the metering station at MP 0, and then run a short distance to the compressor station. In accordance with the Susitna Flats State Game Refuge Management Plan (ADF&G 1988), activities that occur within the refuge must be consistent with the following goals:

1. Manage the refuge for the protection, preservation, and enhancement of fish and wildlife habitat and populations;
2. Manage the refuge to protect, maintain, and enhance public use of fish and wildlife and their habitat and general recreation in a high quality environment; and
3. Manage multiple use activities to ensure compatibility with goals #1 and #2.

Additionally, the plan states that new utilities may be allowed to cross the refuge where no feasible off-refuge alternative exists, consistent with the plan's goals and objectives. Existing corridors must be used wherever possible.

Consistent with the plan, both the pipeline and the electric transmission line would follow existing corridors within the refuge. The pipeline would be within the Pretty Creek public road easement through most of its route through the refuge, and the electric transmission line would follow the Chugach Electric Association high-voltage transmission line corridor to the connection with the Beluga pipeline and then would be within the pipeline ROW to the compressor station at MP 5. Therefore, the project would be consistent with the goals of the plan, and no direct or indirect effects would occur to the state's land use management within the Susitna Flats State Game Refuge.

Management of the Iditarod National Historic Trail

As described in Section 3.15.1.1.2, all portions of the proposed pipeline ROW that cross or approach the INHT would be located on state-managed lands. As noted above, the State of Alaska has agreed to manage the portion of the INHT located on state lands in a manner that protects the historic values of the trail. When considering whether or not to grant a ROW for the proposed pipeline, ADNR would consider historic values of the INHT, and make a decision in the context of state laws, regulations, area plans, and policies. The state would continue to manage lands in proximity to the INHT. Refer to Section 3.16, Recreation; Section 3.17, Visual Resources; and Section 3.20, Cultural Resources for more detailed analysis of project impacts to these uses and resources associated with the INHT.

Local Land Management

Since the pipeline, associated aboveground facilities, and transmission line would be supporting infrastructure to the mine site, these facilities would be consistent with Calista's stated uses for land under its management, which include mineral production (Calista Corporation 2013a). Additionally, because Donlin Gold would obtain a lease agreement and make lease payments to CIRI for the proposed electric transmission line, the project would be consistent with CIRI's mission, which includes promoting the economic well-being of its shareholders (CIRI 2014). The transmission line would be located within an existing transmission corridor on CIRI lands. Therefore, there would be no effects from construction, operations, and closure of the proposed pipeline on Calista's or CIRI's land management.

A portion of both the proposed pipeline, associated aboveground facilities, and electric transmission line would be located on private CIRI lands within the MSB. There is no borough-wide zoning code in the MSB and the project would not be located within any SpUDs; however, the project would still be subject to MSB-wide ordinances (see Section 3.15.1.4.2). There are no prohibitions against the development of pipelines and transmission lines within the MSB, and development of the project would be consistent with the MSB Comprehensive Plan's (MSB 2005) policy of orderly development of multi-modal transportation, including pipelines and electrical lines (see Section 3.15.1.4.2). As a result, these project components would be consistent with the MSB Comprehensive Plan, and no direct or indirect effects would occur to the MSB's land management.

A portion of the proposed transmission line constructed to power the pipeline compressor station crosses private surface estate land owned by CIRI within the KPB. Zoning within the portion of the KPB intersected by the project facilities is unrestricted. The KPB Comprehensive Plan (KPB 2005) does not contain goals, objectives, or implementation actions specific to development of a transmission ROW on lands within the KPB. However, Goal 6.5 calls for maintaining the freedom of property owners in rural areas of the KPB to make decisions and control use of their private land consistent with other goals and objectives of the Comprehensive Plan. With implementation of the mitigation measures described in this EIS and the permit stipulations that would be part of the KPB permitting process described in Section 3.15.1.4.1, the proposed project would be consistent with the KPB Comprehensive Plan's goals and objectives. Therefore, no direct or indirect effects would occur to the KPB's land management.

Other Land Management Considerations

No existing agricultural areas were identified within the vicinity of the proposed pipeline route. However, the eastern part of the proposed pipeline, associated facilities, and transmission line under Alternative 2 cross over soils designated as farmlands of local importance by the MSB. In total, the permanent project footprint would directly affect approximately 100 acres of land designated, but not currently used, as farmlands of local importance. The effect on these designations would be medium in intensity (altering the capability of the soils), and long-term but, local in extent (limited to the footprint of the project facilities). This project component would affect resources that are important in context, since it affect soils designated under the Farmland Protection Policy Act (FPPA), though not currently used for that purpose. Indirect effects may include restricted access to farmlands close to project facilities, depending on management of the ROWs for such facilities.

Land Use

Section 3.15.2 describes land uses within the vicinity of the proposed pipeline, associated aboveground facilities, and transmission line. As described, land uses are limited within the vicinity of the western segment of the pipeline (MP 150 through MP 315) and include scattered habitation, hunting/trapping cabins, and small-scale mining activities. Land uses are more numerous but widely scattered along the eastern segment of the pipeline route (MP 0 through MP 150) and include lodges, private cabins, and residences. Industrial uses (oil and gas exploration) occur in the vicinity of the pipeline origin and the proposed transmission line.

The proposed pipeline would be located in the vicinity of some residences, lodges, and cabins along the eastern portion of the pipeline route; however, there would be no change in these existing land uses because these developments would be located at a distance from the pipeline ROW. Therefore, these land uses, (i.e., the occupation of particular parcels of land) would not be directly or indirectly altered. Some public commenters during the Scoping process expressed concern that introduction of the pipeline corridor would harm their guiding business, since some clients would be expecting a totally undeveloped landscape with no visual intrusions, such as a cleared pipeline ROW. As noted below, potential effects to recreational, visual, and subsistence uses are examined in Section 3.16, Recreation; Section 3.17, Visual Resources; and Section 3.21, Subsistence.

During construction of the proposed pipeline and transmission line, no new surface occupancy would be permitted within the construction ROW, which may temporarily inconvenience the holders of oil and gas leases, State of Alaska leasehold locations, and mining claims that occur within the construction ROW. Additionally, during the operations and closure phases no surface or subsurface occupancy would be permitted within the construction or operations ROW and aboveground facility footprints, which would directly affect oil and gas leases held by Cook Inlet Energy, LLC, Union Oil Co. of California, and Conoco Phillips Alaska, Inc.; State of Alaska leasehold locations held by Charles Poulson and Last Chance; and State of Alaska mining claims held by Geoinformatics Alaska Exploration, Inc., Tommy Partee, DBA Nuway Mining Company, and Chedatna Lakes. Actions proposed under Alternative 2 would be in compliance with existing lease and easement authorizations and coordinated with existing owners. The State of Alaska may issue additional authorizations affecting existing leases, but the lessee is entitled to damages at a fair market value. While Alternative 2 would not preclude development of the oil and gas leases, mining leaseholds locations, and mining claims crossed

by the proposed project facilities, lease and claimholders would be prohibited from developing incompatible facilities within the portions of the lease and claim areas occupied by the construction or operations ROW and aboveground facilities footprints.

Direct effects of the pipeline ROWs to land use would be high in intensity (shift from largely undeveloped to an industrial use), long-term in duration (during operations and closure of the proposed project), regional in extent (extending across a 315 mile landscape), and common in context (primarily affecting land uses extensively available throughout the region), with the exception of limited impact to the INHT which would be important in context. Because Alternative 2 is not expected to result in the revocation or transference of oil and gas leases, mining claims, or leasehold locations, no indirect effects to these industrial uses would occur.

The construction, operations, and closure of the proposed pipeline ROW has the potential to increase access, particularly by snowmachine, but also by all-terrain vehicles or aircraft, thereby increasing existing recreation and subsistence use. The distribution of these uses (including use of the INHT) and potential impacts of the project on recreational and subsistence resources are described in Section 3.16, Recreation; and Section 3.21, Subsistence.

Pipeline Summary

Under Alternative 2, direct impacts would be of high intensity primarily due to the change in land use from partially disturbed and undisturbed use to an industrial use along the length of the pipeline ROW. However, low intensity indirect effects to land ownership (future state land disposals) and low intensity direct effects to land management (farmlands of local importance) would also occur. Authorization of the pipeline ROW and the electric transmission line easement would have no direct effect on land ownership because the surface and subsurface land ownership would not change and the proposed pipeline is compliant with management plans at federal, state, borough, and local levels. Overall direct and indirect effects to land ownership, management, and use would be long-term and occur throughout the construction, operations, and closure phases. Impacts would affect lands within the proposed pipeline ROW, but would occur along the length of the 315 mile ROW, thus making impacts regional in extent. Direct and indirect effects along the majority of the pipeline would be common, affecting land uses that are extensively available through the region; however, impacts to 14.5 miles of INHT, as a Congressionally-designated trail, would be considered important in context.

3.15.3.2.4 CLIMATE CHANGE

The proposed project would contribute to climate change as discussed in Section 3.8, Air Quality, through production of greenhouse gasses. The level of greenhouse gas emissions generated by implementation of Alternative 2 is not likely to create climate changes effects to land ownership, land management, and land use. If current climate change trends persist, impacts to land ownership, management, and use would likely be similar to those discussed under the Affected Environment (Section 3.15.2.1.4).

3.15.3.2.5 SUMMARY OF IMPACTS FOR ALTERNATIVE 2

For the mine site, the summary impact to land ownership, management, and use under Alternative 2 would be major and beneficial. This summary impact is based predominantly on the high intensity and long-term to permanent change in land use from a predominantly

undeveloped land with mineral exploration activities and infrastructure to an industrial use at the mine site. As these effects would be positive from the vantage point of the land owner, the overall impact is considered beneficial. Furthermore, impacts from the construction, operations, and closure would be limited to the mine site, and therefore local in extent; but the special mineral characteristics of the mine site, relative to other Calista Corporation and TKC lands, would be unique in context and beneficial from the vantage point of the land owner.

For transportation facilities, the summary impact to land ownership, management, and use under Alternative 2 would be major (beneficial), except low (adverse) on a small extent of state lands affected by the mine access road. The predominant impact to lands from the construction, operations, and closure of transportation facilities would be a high intensity change in land use from predominantly undeveloped lands with mineral exploration activities and infrastructure uses to an industrial use. From the vantage point of private land owners such as Calista Corporation, TKC, and the Dutch Harbor and Bethel ports, these effects would be positive, while the effect for state lands would be a low intensity change in use, but in line with land management plans. Overall impacts would be permanent in duration (extending beyond the life of the project) and regional in extent (affecting resources throughout the EIS Analysis Area). These direct and indirect impacts result in a summary impact of major. However, as impacts to lands would be beneficial for some land owners, and a low intensity change in use on a small extent of state lands.

For the natural gas pipeline, the summary impact to land ownership, management, and use under Alternative 2 would be moderate. As with the mine site and transportation facilities, the predominant direct impact associated with the pipeline would be a high intensity change in land use from undisturbed and partially disturbed to an industrial use. As indirect impacts to land ownership and direct impacts to land management and use would not extend beyond the life of the project, the overall duration would be long-term. This combined with the regional extent of impacts and important context of impacts to 14.5 miles of the INHT lead to an overall summary impact of moderate.

See Table 3.15-10 for a summary of impacts to land ownership, management, and use under Alternative 2.

Table 3.15-10: Alternative 2 Impact Levels by Project Component

Impacts	Impact Level				
	Magnitude or Intensity	**Duration**	**Geographic Extent**	**Context**	**Summary Impact Rating[1]**
Mine Site					
Change in Land ownership	Low	Permanent	Local	Important	
Change in Land management	No impact to land management; action is consistent with management plans.				
Change in Land use	Construction/ Operations: High (Beneficial) Closure: Low	Construction/ Operations: Long-term Closure: Permanent	Local	Unique	

Table 3.15-10: Alternative 2 Impact Levels by Project Component

Impacts	Impact Level				
	Magnitude or Intensity	**Duration**	**Geographic Extent**	**Context**	**Summary Impact Rating[1]**
Summary	High (Beneficial)	Permanent	Local	Unique	Major (Beneficial)
Transportation Facilities					
Change in Land ownership	Low	Permanent	Local	Important	
Change in Land management	No impact to land management; action is consistent with management plans.				
Change in Land use	Construction/ Operations: High (Beneficial) Closure: Low	Construction/ Operations: Long-term Closure: Permanent	Regional	Common	
Summary	High (Beneficial)	Permanent	Regional	Common	Major (Beneficial) except Low (Adverse) for low level uses of state lands
Pipeline					
Change in Land ownership	Direct: No Effect Indirect: Low	Direct: No Effect Indirect: Temporary to long-term	Direct: No Effect Indirect: Local	Direct: No Effect Indirect: Common	
Change in Land management	No or low impact to land management; no amendment to land use plans required as action is consistent with management plans.				
Change in Land use	High	Long-term	Regional	Important	
Summary	High	Long-term	Regional	Important	Moderate

Notes:

1 The summary impact rating accounts for impact reducing design features proposed by Donlin Gold and Standard Permit Conditions and BMPs that would be required. It does not account for additional mitigation measures the Corps is considering

These effects determinations take into account impact reducing design features (Table 5.2-1 in Chapter 5, Impact Avoidance, Minimization, and Mitigation) proposed by Donlin Gold and also the Standard Permit Conditions and BMPs (Section 5.3 in Chapter 5, Impact Avoidance, Minimization, and Mitigation) that would be implemented. Several examples of these are presented below.

Design features most important for reducing impacts to land ownership, management, and use include:

- Pipeline routing to avoid private lands (outside of ANCSA Corporation lands) to the maximum extent possible;

- Pipeline routing through Alaska Range north of Dalzell Gorge decreased overlap and impact to INHT, when compared to Alternative 6A routing;
- Decommission all temporary transportation improvements to minimize creation of new public access to remote areas;
- Areas of disturbed bedrock and surficial deposits along the ROW, roads, and material sites would be contoured to match existing landforms as feasible, ripped to mitigate compaction effects, covered with growth media as needed and revegetated;
- Salvage growth media and topsoil for revegetation; use of native seed mixes; and
- Timber clearing and utilization to prevent insect infestation.

Standard Permit Conditions and BMPs most important for reducing impacts to land ownership, management, and use include:

- Developing spill prevention and response type plans as required by federal and state requirements. The plan(s) will prescribe effective processes and procedures to prevent the spill of fuel or hazardous substances and include procedures to respond to accidental releases; and
- Developing an Erosion and Sediment Control Plan and Storm Water Pollution Prevention Plans prior to the commencement of ground disturbance activities.

3.15.3.2.6 ADDITIONAL MITIGATION AND MONITORING FOR ALTERNATIVE 2

While the Corps is considering additional mitigation to reduce the effects presented above (Tables 5.5-1 and 5.7-1 in Chapter 5, Impact Avoidance, Minimization, and Mitigation), no additional mitigation measures have been identified to reduce effects to land ownership management, and use. Thus, the summary impact rating for land ownership, management, and use would remain moderate.

3.15.3.3 ALTERNATIVE 3A – REDUCED DIESEL BARGING: LNG-POWERED HAUL TRUCKS

Since the liquid natural gas (LNG) plant, storage containers, and distribution infrastructure footprint would be located within an area that would be disturbed under Alternative 2, and since these facilities would be of the same industrial nature as the rest of the mine site facilities, no additional impacts on land ownership, management, or use are identified for this alternative.

Under Alternative 3A, other direct and indirect impacts associated with the transportation facilities and pipeline components would also be similar or the same as for Alternative 2 (see Section 3.15.3.2). Impacts associated with climate change would also be the same as discussed for Alternative 2. The effects determinations take into account applicable impact reducing design features, as discussed in Alternative 2. No additional mitigation measures have been identified to reduce effects to land ownership, management, and use.

3.15.3.4 ALTERNATIVE 3B – REDUCED DIESEL BARGING: DIESEL PIPELINE

The majority of the proposed diesel pipeline would be located in the same corridor as the proposed natural gas pipeline under Alternative 2 and would create the same impacts as described in Section 3.15.3.2.3.

An additional 19-mile segment would be constructed between Tyonek and the start of the proposed corridor for the natural gas pipeline for Alternative 3B. Almost half of this extension (7.7 miles) would be routed along an existing Beluga Gasline Alaska Pipeline Company and Chugach Electric Association, Inc. ROW. The remainder of the extension (8.8 miles) of the segment would be primarily located on lands with surface rights held by Tyonek Native Corporation and subsurface rights held by CIRI. Because Donlin Gold would obtain a lease agreement and make lease payments to CIRI for the proposed diesel pipeline, the project would be consistent with CIRI's mission, which includes promoting the economic well-being of its shareholders (CIRI 2014). The discussion in Section 3.15.3.2.3 regarding effects to the MSB's and KPB's land management from the electric transmission line proposed under Alternative 2 also applies to this 18-mile segment of the diesel pipeline under Alternative 3B.

The State of Alaska owns the remaining lands (1.8 miles) of the extension. Lands managed by the State of Alaska in this area are governed by the Kenai Area Plan (ADNR 2001). The proposed improvements to the existing Tyonek North Foreland Barge Facility would be consistent with the plan's goals for waterfront development: "Aid in the development of infrastructure (ports, roads, log transfer facilities, railroads, etc.) and continue to provide support to waterfront industries." The expansion of the existing waterfront facilities under Alternative 3B would also be consistent with the plan's direction to jointly use and consolidate resource transfer sites wherever feasible and prudent. Similarly, collocation of the diesel pipeline with the Beluga Gasline Alaska Pipeline Company and Chugach Electric Association, Inc. ROW would be consistent with the plan's guidance for the joint use and consolidation of surface access routes and facilities wherever feasible and prudent. Therefore, no direct or indirect effects would occur to the state's land management within the area governed by the Kenai Area Plan. Potential impacts on land use from this additional 18-mile segment would be negligible as the diesel pipeline would be of the same industrial nature as the existing Beluga gas line and Chugach Electric Association transmission line that it would parallel.

The existing dock at Tyonek Foreland Facility would be extended an additional 1,500 feet and a temporary barge landing would be constructed on the beach adjacent to the dock. In addition, a new operations center would be constructed on uplands near the dock. The temporary barge landing would change the current land use from a primarily undisturbed site to a developed area, causing a high intensity (large change in land use), temporary in duration (occurring during construction), and localized impact on land use. The new operations center would also change the current land use from a primarily undisturbed site to a developed area with some residential use and is expected to have a moderate, long-term, and localized land use impact. These affects to land use, however, would be beneficial from the vantage point of the land owner.

For the diesel pipeline, some of the construction infrastructure would be required to remain through operations to provide for a reasonable diesel spill response capability (see Section 2.3.4.3 in Chapter 2, Alternatives, for details on retained access infrastructure). Impacts would be the same as discussed for construction under Alternative 2, except be long-term instead of temporary, as it would last through the life of the project.

Under Alternative 3B, other direct and indirect impacts associated with the transportation facilities and mine site components would be similar or the same as for Alternative 2 (see Section 3.15.3.2). Impacts associated with climate change would also be the same as discussed for Alternative 2. The effects determinations take into account applicable impact reducing

design features, as discussed in Alternative 2. No additional mitigation measures have been identified to reduce effects to land ownership, management, and use.

3.15.3.5 ALTERNATIVE 4 – BIRCH TREE CROSSING (BTC) PORT

Alternative 4 would move the upriver port site from Angyaruaq (Jungjuk) to a location downstream at BTC. The BTC Port would consist of the same infrastructure as the port proposed under Alternative 2 and would be constructed on approximately 62 acres of undeveloped land owned by Calista Corporation and TKC. This alternative would also require a 76-mile all-season access road, also on undeveloped land, including 32 culverts and 8 bridges. Under Alternative 4, Donlin Gold would apply for authorization for ROWs for the road on state, BLM-managed federal, Calista Corporation, and TKC lands. The BLM ROW authorization would be governed by the provisions of FLPMA. All other facilities for Alternative 4 would be the same as for Alternative 2 (see Section 3.15.3.2).

The 76-mile access road and associated material sites for Alternative 4 are located on lands managed or owned by the State of Alaska, BLM, and TKC, with subsurface rights held by Calista for the TKC lands. Except for the uncertainty regarding selected lands noted below, the lease agreements with the BLM, State of Alaska, Calista Corporation, and TKC would allow Donlin Gold to construct an access road, but the underlying surface and subsurface land status would not change. Therefore, there would be no direct effects to the existing land ownership.

No direct effects would occur to existing land management for the 76-mile access road. Lands managed by the State of Alaska in this region are governed by the Kuskokwim Area Plan which would not preclude development of an access road. BLM lands in this area are managed by the Southwest MFP which acknowledges that the development of renewable and non-renewable resources within the planning area would require the development of a surface transportation network, and makes public lands available for such purposes (BLM 1981). Use of TKC and Calista lands would be consistent with TKC's management objectives and overall land management direction (see Section 3.15.1.3) as well as Calista's stated land uses, which include mineral production. Therefore, there would be no direct effects to land management from the development of a 76-mile access road for the BTC Port alternative.

Minor indirect effects to land ownership and management may occur. The majority of the access road is located on State of Alaska selected lands managed by the BLM. For these state-selected lands, it is possible that the conveyance process may be accelerated so that the state would own more of the road alignment. However, the priority setting process for final selections by the state is complicated, so it is not possible to predict what changes might occur, if the BTC alternative access road were to be permitted. Until the conveyance process is concluded, these selected lands are managed by the BLM. If the selections were to proceed to conveyance, then the state-selected lands would be owned and managed by the state.

Under Alternative 4, a very small segment of the road to the BTC Port would be located within the external boundaries of the Yukon Delta NWR. However, the segment would be located on in-holding lands with surface rights held by TKC and subsurface rights held by Calista. Therefore, there would be no effects to management of the Yukon Delta NWR.

The proposed port at Birch Tree Crossing would change 62 acres of land from undisturbed to developed land. The 76-mile access road would convert 568 acres of land from an undisturbed state to a developed state. Road and facility construction materials would be excavated from

material sites along the access road, which would impact an additional 1,057 acres of land. The temporary ice road required for development of the access road would impact 91 acres of land, but would not substantially alter the land use and would have limited direct and indirect impacts. Impacts associated with climate change would also be the same as discussed for Alternative 2.

3.15.3.5.1 SUMMARY OF IMPACTS FOR ALTERNATIVE 4

Impacts associated with the mine site and pipeline components would be similar or the same as for Alternative 2 (see Section 3.15.3.2). Under Alternative 4, barges would travel shorter distances on the Kuskokwim River, and the access road would be longer than proposed under Alternative 2. However, overall impacts to land ownership, management, and use would be similar to those under Alternative 2. Under Alternative 4, the unique portion of the BTC mine access road would have no direct effects on land ownership and management as the underlying surface and subsurface land status would not change, although an indirect effect may be acceleration of conveyance of state-selected lands. Direct effects to 17(b) easements at Angyaruaq (Jungjuk) Port would be avoided under this alternative. Alternative 4 would have low intensity indirect effects to land management if it would accelerate the conveyance of selected lands along the proposed BTC mine access road. The summary effect of the BTC mine access road would be minor, while effects of the other components would be the same as those of Alternative 2. Impacts associated with climate change would also be the same as discussed for Alternative 2. The effects determinations take into account applicable impact reducing design features, generally as discussed in Alternative 2, with an additional design feature. The Alternative 4 access road would avoid the Yukon Delta NWR. No additional mitigation measures have been identified to reduce effects to land ownership, management, and use.

3.15.3.6 ALTERNATIVE 5A – DRY STACK TAILINGS

The Tailings Storage Facility (TSF) would be located in the same general location as under Alternative 2 and would encompass 2,500 acres, as opposed to 2,450 acres under Alternative 2. Impacts on land ownership, management, and use would be virtually the same as those described for Alternative 2.

All other components for Alternative 5A would be the same as for Alternative 2, so direct, and indirect impacts for Alternative 5A would be the same as for Alternative 2. Impacts associated with climate change would also be the same as discussed for Alternative 2. The effects determinations take into account applicable impact reducing design features, as discussed in Alternative 2. No additional mitigation measures have been identified to reduce effects to land ownership, management, and use.

3.15.3.7 ALTERNATIVE 6A – MODIFIED NATURAL GAS PIPELINE ALIGNMENT: DALZELL GORGE ROUTE

Alternative 6A would realign the natural gas pipeline from MP 106.1 to 152.7, a distance of 46.2 miles or 14.6 percent of the Alternative 2 alignment. The pipeline ROW under Alternative 6A would be slightly shorter, at 314 miles, compared to 315 for Alternative 2. The alignment would be to the west of the proposed action and would traverse Dalzell Gorge. Approximately 44 miles of this route would be located in the near vicinity of (within 1,000 feet), or would be

collocated (within 100 feet) with the INHT. In large part (29.4 miles), these segments would fall within existing state public access easements. All other facilities for Alternative 6A would be the same as for Alternative 2 resulting in the same impacts (see Section 3.15.3.2).

Land owners or managers for the Alternative 6A Dalzell Gorge segment would remain the State of Alaska and CIRI. No differences from Alternative 2 in land ownership would occur.

Compared to Alternative 2, Alternative 6A would intersect more state lands that are collocated with or adjacent to the INHT, as illustrated in Table 3.15-11. As noted above, the State of Alaska has agreed to manage the portion of the INHT located on state lands in a manner that protects the historic values of the trail. When considering whether or not to grant a ROW for the proposed pipeline, ADNR would consider historic values of the INHT, and make a decision in the context of state laws, regulations, and policies. Refer to Section 3.16, Recreation; Section 3.17, Visual Resources; and Section 3.20, Cultural Resources for other effects to the INHT.

Table 3.15-11: Miles of Iditarod National Historic Trail Impacted

	Alternative 2, 3, 4, & 5A – Proposed Action	Alternative 6A – Dalzell Gorge Route	Difference Numeric	Difference Percent
Crossings	13	34	+21 crossings	+62%
Collocated	4.0 miles	14.5 miles	+10.5 miles	+72%
Within 1,000'	10.5 miles	29.4 miles	+18.9 miles	+64%
Total Miles:	**14.5 miles**	**44.0 miles**	**+29.5 miles**	**+67%**

Like the corresponding segment under Alternative 2, construction, operations and maintenance, and closure of the buried natural gas pipeline in the Dalzell Gorge Route would have a high magnitude, temporary impact on land use during construction resulting from the change from relatively undisturbed to intensive construction activity. During operations and closure, the buried pipeline would have very low intensity, long-term impacts on land uses. The underground portion of the pipeline would be capped and abandoned in place and would result in very low impact. The impacts to land use would be regional in extent along the ROW.

Other land uses that may be affected by construction, operations, and closure of the Dalzell Gorge Route include recreational use (including use of the INHT) and subsistence use. The distribution of these uses and potential impacts of the project on recreational and subsistence resources are described in Section 3.16, Recreation, and Section 3.21, Subsistence.

3.15.3.7.1 SUMMARY OF IMPACTS FOR ALTERNATIVE 6A

Impacts associated with the mine site and transportation components would be similar or the same as those for Alternative 2 (see Section 3.15.3.2). The ROW for Alternative 6A would be slightly shorter, but would not change land ownership from Alternative 2. The proposed pipeline alignment for Alternative 6A intersects more state lands crossing or adjacent to the INHT. Similar to Alternative 2, pipeline impacts on land use would be of temporarily high intensity during construction, (change of land use within the operations ROW width and the aboveground facility footprints), diminished to low intensity during operations and closure.

The effects would be regional in extent (extending along the 313-mile ROW), and affecting resources that are important in context (in the portion affecting the congressionally designated INHT). Impacts would be long-term to permanent (some underground portions would remain in place). Impacts associated with climate change would also be the same as discussed for Alternative 2. The effects determinations take into account applicable impact reducing design features, as discussed in Alternative 2. No additional mitigation measures have been identified to reduce effects to land ownership, management, and use.

3.15.3.8 IMPACT COMPARISON – ALL ALTERNATIVES

A comparison of the impacts to land ownership, land management, and land use by alternative is presented in Table 3.15-12.

Table 3.15-12: Comparison of Impacts by Alternative*

Impact-causing Project Component	Alt. 2 – Proposed Action	Alt. 3A – LNG-Powered Haul Trucks	Alt. 3B – Diesel Pipeline	Alt. 4 – BTC Port	Alt. 5A – Dry Stack Tailings	Alt. 6A – Dalzell Gorge Route
Acres Affected Mine Site	TKC/Calista (Surface/Surface): 4,370.6 acres Calista (Additional Surface/Subsurface): 4,575.7 acres **Total: 8,946.3 acres**	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2	TKC/Calista (Surface/ Surface): 4,347.8 acres Calista (Surface/ Subsurface): 4,719.2 acres **Total: 9,067 acres**	Same as Alternative 2
Acres Affected Transportation Facilities	TKC/Calista (Surface/Surface): 276.8 acres Calista (Additional Surface/Subsurface): 15.3 acres State: 573.7 acres **Total: 865.8 acres**	Same as Alt 2	TKC/Calista (Surface/Surface): 276.8 acres Calista (Additional Surface/ Subsurface): 15.3 acres State: 573.7 acres Tyonek Native Corporation/CIRI: 13.5 acres **Total: 879.3 acres**	TKC/Calista (Surface/Surface): 489.9 acres Calista (Additional Surface/ Subsurface): 15.3 acres State: 315.5 acres Federal (BLM-managed State selections): 913.9 acres **Total: 1,734.6 acres**	Same as Alternative 2	Same as Alternative 2
Acres Affected Pipeline Construction ROW	Total ROW: 315 miles Calista: 98.5 acres CIRI: 113.3 acres Federal (BLM): 1,771.5 acres State: 3,750.0 acres Private Land: 0.9 acres **Total: 5,734.3 acres**		Total ROW: 334 mile Calista: 98.5 acres CIRI: 220.1 acres Tyonek Native Corporation Surface/CIRI Subsurface: 68 acres Federal (BLM): 1,773.8 acres State: 3812.6 acres Kenai Peninsula Borough:90 acres Native Village of Tyonek: 0.7 acres Native Allotment: 2.2 Acres Private: 5.2 acres **Total: 6,071.2 acres**			Total ROW: 314.2 miles Calista: 98.5 acres CIRI: 176.6 acres Federal (BLM): 1,771.5 acres State: 3,664.2 acres Private: 0.0002 acres **Total: 5,711.8 acres**
Acres Affected Pipeline Operations ROW	Total ROW: 315 miles Calista: 32.8 acres CIRI: 37.9 acres Federal (BLM): 599.9 acres State: 1,252.2 acres Private Land: 0.0002 acres **Total: 1,922.7 acres**	Same as Alt 2	Total ROW: 334 mile Calista: 32.8 acres CIRI: 73.7 acres Tyonek Native Corporation/CIRI (Surface/Subsurface): 22.5 acres Federal (BLM): 599.9 acres State: 1,273.6 acres Kenai Peninsula Borough: 31.2 acres Native Village of Tyonek: 0.2 acres Native Allotment: 0.4 Acres Private: 0.8 acres **Total: 2,034.4 acres**	Same as Alternative 2	Same as Alternative 2	Total ROW: 314.2 miles Calista: 32.8 acres CIRI: 60. acres Federal (BLM): 599.9 acres State: 1,226.6 acres Private: 0.0002 acres **Total: 1,918.3 acres**

Table 3.15-12: Comparison of Impacts by Alternative*

Impact-causing Project Component	Alt. 2 – Proposed Action	Alt. 3A – LNG-Powered Haul Trucks	Alt. 3B – Diesel Pipeline	Alt. 4 – BTC Port	Alt. 5A – Dry Stack Tailings	Alt. 6A – Dalzell Gorge Route
Impact Summaries						
Mine Site	The summary impact is considered major and beneficial. Intensity would be high (beneficial) overall, as changes to lands would be positive from the vantage of the land owner. However, low intensity direct impacts to 17(b) easements would occur. Duration of effects would be permanent and extend beyond the life of the mine. Effects are local in extent and limited to the mine site. Impacts would affect a mineral resource rare on Calista/TKC lands, considered unique in context.	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2
Transportation Facilities	The summary impact is considered major beneficial except low (adverse) for low level uses of state lands. The predominant impact would be a high intensity change from undisturbed and partially disturbed uses to an industrial use but which would be beneficial from the vantage point of private land owners such as Calista Corporation, TKC, and the Dutch Harbor and Bethel ports. The low-level effect for state lands would be adverse. Actions would be in line with land management plans. Duration of effects would be permanent and extend beyond the life of the mine. Effects are regional and affect resources throughout the Project Area.	Same as Alternative 2	Same as Alternative 2	Impacts would be similar to Alternative 2, but would include reduced impacts from barging due to the shorter distance and increased impacts from a longer access road. Alternative 4 may have low intensity indirect effects to land management if it would accelerate the conveyance of selected lands along the proposed road to BTC.	Same as Alternative 2	Same as Alternative 2
Pipeline	The summary impact is considered moderate. Intensity includes high impact to land use as lands would change from mostly undisturbed to industrial use. No direct impacts to land ownership or management would occur, but there would be low intensity indirect impacts to land ownership. Duration of effects would be long-term and not extend beyond the life of the mine. Effects would be regional and affect resources along the pipeline ROW. Impacts would predominantly affect common land resources; however impacts to the INHT would be important in context.	Same as Alternative 2	Impacts would be similar or the same as Alternative 2, and would encompass impacts from an additional 18-mile pipeline segment to Tyonek and include the Cook Inlet diesel transport facilities.	Same as Alternative 2	Same as Alternative 2	Impacts would be similar or the same as those for Alternative 2. The ROW for Alternative 6A would be slightly shorter, but would not change land ownership from Alternative 2. The proposed pipeline alignment for Alternative 6A intersects more state lands crossing or adjacent to the INHT.

Notes:

* The No Action Alternative would have no new impacts.